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USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK. VOLUME 99. C-119L AI--ETC(U)
MAY 77 R G POWELL

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Volume 99

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USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK.

Volume 99.

C-119L Aircraft, Near and Far-Field Noise.

9 Technical rept.,

10 Robert G. / Powell

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MAY 1977

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ference level, perceived noise level, and limiting times for total daily exposure of personnel with and without standard Air Force ear protectors. Far-field data measured at 19 locations are normalized to standard meteorological conditions and extrapolated from 75-8000 meters to derive sets of equal-value contours for these same seven acoustic measures as functions of angle and distances from the source. Refer to Volume 1 of this handbook, "USAF Bioenvironmental Noise Data Handbook, Vol 1: Organization, Content and Application, AMRL-TR-75-50(1) 1975, for discussion of the objective and design of the handbook, the types of data presented, measurement procedures, instrumentation, data processing, definitions of quantities, symbols, equations, applications, limitations, etc. 1

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PREFACE

This report was prepared by the Biodynamic Environment Branch, Aerospace Medical Research Laboratory, under Project/Task 723104, Measurement and Prediction of Noise Environments of Air Force Operations.

The author gratefully acknowledges Mr. John Cole for his assistance in preparing this report, Mr. Jerry Speakman and Mr. Robert Lee for their assistance in acquiring the raw data, Mr. Keith Kettler, Mr. Henry Mohlman and Mr. David Eilerman of the University of Dayton for assistance in the mechanics of data processing, and Mrs. Peggy Massie and Mr. Mike Patterson for assistance in typing and preparation of the graphics.

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INTRODUCTION

The USAF C-119L is a cargo aircraft powered by two R3350-89B reciprocating engines. The aircraft was manufactured by the Fairchild Hiller Corporation and the engines by Curtiss-Wright.

This volume provides measured and extrapolated data defining bioacoustic environments produced by this aircraft during ground runup operations. Such data are essential to evaluate ear protection requirements, limiting personnel exposure times, voice communication capabilities, and annoyance problems associated with ground runups of the C-119L aircraft.

This volume is one of a series published by the AMRL under the same report number (AMRL-TR-75-50) as a multi-volume handbook that quantifies the noise environments produced at flight/ground crew locations and in surrounding communities by operations of Air Force aircraft and ground support equipment. The far-field, community-type, noise data in the handbook describe the noise produced during *ground operations* of aircraft, ground support equipment, and other ground-based equipment or facilities.

Volume 1 of this handbook discusses the objectives and design of the handbook, the types of data presented, measurement procedures, instrumentation, data processing, definitions of quantities, symbols, equations, applications, limitations, etc. Volume 2 provides a method and data for adjusting the handbook's far-field noise data, which are for standard meteorological conditions (15 C temperature, 70% relative humidity, 0.760 meter Hg barometric pressure), to derive comparable data for other meteorological conditions. *Refer to Volumes 1 and 2* (references 1 and 2) for such information because it is not repeated in other handbook volumes.

A cumulative index lists those aerospace systems contained in the handbook, and identifies the specific volumes containing each type of environmental noise data available (i.e., *inflight/flight crew and passenger noise*, *near-field/ground crew noise*, *far-field/community noise*). Volume numbers are assigned sequentially as individual volumes are published. This index is periodically updated as individual volumes are published and is available upon request from AMRL/BBE, Wright-Patterson AFB, OH 45433. Organizations on the distribution list for the handbook will automatically receive a copy of each updated index.

Direct any questions concerning the technical data in this report and other handbook volumes to: AMRL/BBE, Wright-Patterson AFB, OH 45433; AUTOVON 78-53675 or 78-53664; Commercial (513) 255-3675 or (513) 255-3664.

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1. Cole, John N., *USAF Bioenvironmental Noise Data Handbook, Volume 1: Organization, Content and Application*, AMRL-TR-75-50 (1) Aerospace Medical Research Laboratory, Wright-Patterson Air Force Base, Ohio, 1975.
 2. Cole, John N., *USAF Bioenvironmental Noise Data Handbook, Volume 2: Procedure to Evaluate Effects of Non-standard Meteorological Conditions on Far-Field Noise*, AMRL-TR-75-50 (2), Aerospace Medical Research Laboratory, Wright-Patterson Air Force Base, Ohio, 1975.

NEAR-FIELD NOISE

MEASUREMENTS

AMRL acquired near-field noise data on the C-119L aircraft during ground runup operations of its reciprocating engines. For these tests the aircraft was located on a taxiway at Wright-Patterson AFB with no significant reflecting surfaces in the vicinity except the ground plane. Table 1 gives the surface meteorological conditions and nomenclature for ground crew locations. The ground-crew chief selected power conditions and near-field locations usually used during routine maintenance or engine runup for preflight checks.

At each near-field location a test engineer randomly moved a hand-held microphone in and around each location, probing all areas where a crew member's head would normally be located. He recorded all the noise samples on magnetic tape. During analysis of each sample, he determined the one-third octave band root-mean-square sound pressure using a 4- or 8-second integration time to derive a power-averaged level for each location. Figure 1 shows the five near-field locations where ground crew are usually located for maintenance and/or preflight checkout operations. Estimates of noise levels at other locations are difficult in the near-field since the noise source is spatially distributed, i.e., not a point source. The noise levels at near-field locations can vary widely depending upon relative distances from each noise source (intake noise, exhaust noise, panel resonances, internal engine noise through the engine wall, etc.).

Table 1 lists the numeric/alphabetic designators used on the data pages in this report to identify the measurement locations and test conditions. For example, the designator 1/A means ground crew location 1 and test condition A.

RESULTS

The measured data presented in Table 2 define the sound pressure levels (SPL) produced by the C-119L aircraft at the 5 ground crew locations. This table includes the overall, 1/3 octave band and octave band levels. From these data one can calculate the variety of measures given in Table 3, which are widely used to assess the effects of noise on personnel and their performance.

All near-field data are for the meteorological conditions at the time of the tests but are valid for all typical airbase meteorology because of the short sound propagation distances involved.

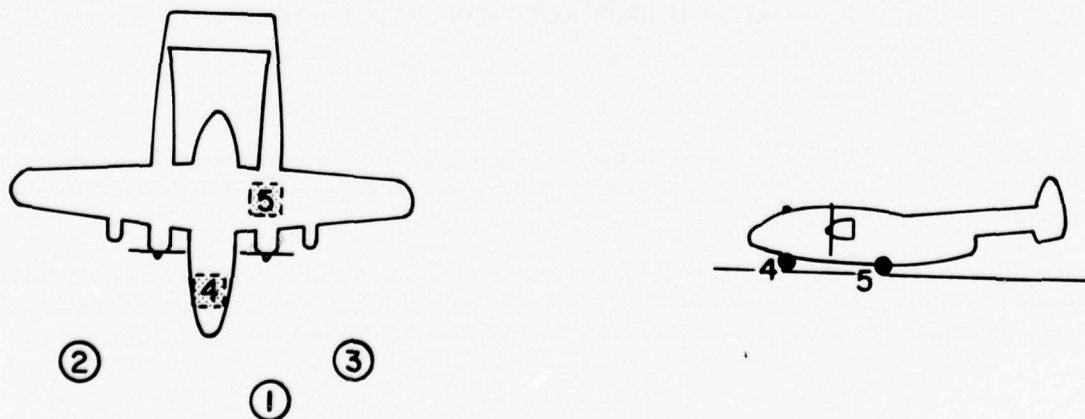


Figure 1. Near-Field Measurement Locations on a Taxiway at Wright-Patterson AFB, OH

TABLE 1

MEASUREMENT LOCATIONS AND TEST CONDITIONS
FOR NEAR-FIELD NOISE MEASUREMENTS

C-119L Aircraft, Ground Runups, Wright-Patterson AFB, OH
Tail #37884, 26 September 1974

Ground Crew Location

1	Marshal
2	Engine Start
3	Engine Start
4	Chock Pull
5	Chock Pull

Aircraft Engine Operation

A	Both Engines Idle
---	-------------------

Meteorology

Temperature	20.0 C
Bar Pressure	0.737 M Hg
Rel Humidity	80 %
Wind — Speed	3.6 M/Sec (7 Kts)
— Direction	220 Deg

FAR-FIELD NOISE

MEASUREMENTS

AMRL acquired far-field data during a 1- 2-hour test period, thus keeping similar meteorological conditions. Figure 2 shows the ground runup area (taxiway), ground cover, aircraft orientation and 19 microphone measurement sites on the semicircle. The center of the 75 meter radius semicircle used in surveying the R-3350-89B engines was on the ground directly below the intersection of the aircraft's centerline and the plane passing through both engines' propeller planes.

Table 4 provides cockpit readouts of engine characteristics (RPM, fuel flow, etc.) for each power setting used in the far-field tests. Also listed in this table are the surface meteorological conditions during data acquisition.

All 19 microphone measurement sites are in the acoustic far-field of the source where the sound wave-fronts spherically diverge and the noise source may be regarded as a point source.

A portable microphone/tape-recorder system was used to sequentially record the noise at each far-field location. The microphone was attached to a hand-held pole, pointed at the source (0° angle of incidence) and vertically scanned from 0.5 to 3 meters for a period of 5-10 seconds during data acquisition at each microphone location. These samples were then time-integrated to derive a root-mean-square sound pressure level. Vertical scanning and time-integrating together reduce anomalies frequently present in data acquired by a fixed height microphone.

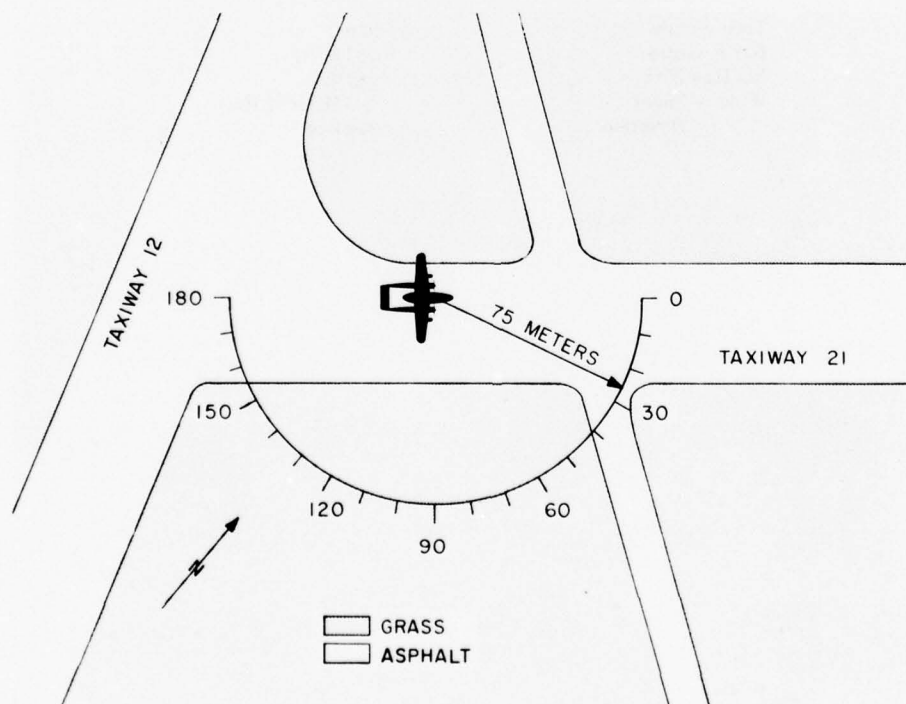


Figure 2. Far-Field Measurement Locations on a Taxiway at Wright-Patterson AFB, OH

RESULTS

Table 5 lists the overall and 1/3 octave band SPL measured at the far-field locations under meteorological conditions at the time of the test. Data in all other figures and tables are based on these levels. These data were normalized to 100 meters distance and standard meteorological conditions (15 C temperature, 70% relative humidity, 0.760 meter Hg barometric pressure) and used to derive the graphic data in Figure 3 which provides a compact summary of the far-field noise characteristics of the C-119L aircraft in a standard format.

Figure 4 and Table 6 present two basic acoustic measures, the acoustic power level and the directivity index, respectively. The acoustic power level describes the power radiated by the source as a function of frequency. The directivity index is a standard acoustical engineering measure that describes the geometric way in which the source radiates this power as a function of both frequency and angle from source. These basic source measures are primarily of interest for acoustical engineers and noise generation/control specialists.

Estimates of the noise levels for intermediate power settings (e.g., 2300 RPM) and/or different number of engines operating (e.g., single engine) can be determined as explained in Volume 1 of this handbook.

Figures 5 through 11 are sets of equal noise contours describing seven different measures of noise as a function of angle and distance from the source for standard day meteorology. They are, respectively, overall sound pressure level, C-weighted sound level, A-weighted sound level, perceived noise level, speech interference level, permissible exposure times for personnel and octave band sound pressure levels.

Data excessively influenced by spurious background/electronic noise were eliminated from all figures and tables. No data are presented at the 180 degree location for the taxi and propeller speed check, nor at the 170/180 locations for the magneto check and the maximum power settings because of turbulent air flow behind the aircraft. Typically, the A-weighted levels for these angles are 0 to 5 dBA below the level measured at the preceding microphone location.

Test personnel performed noise surveys during quiet periods when the background noise was minimal, e.g., early in the morning when no other aircraft or engine test stands were operating. Data eliminated because they were near the background/electronic noise were generally not significant because the levels were so low (e.g., Table 5, idle power).

Volume 2 of the handbook describes the influence of meteorology on far-field noise environments, and provides, if required, the factors necessary to adjust the handbook's standard meteorological day data.

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)		IDENTIFICATION:	
1/3 OCTAVE BAND			
2		OMEGA 3.2	
		TEST 74-074-001	
NOISE SOURCE/SUBJECT:		RUN 01	
(OPERATION:			
(
C-119L AIRCRAFT		04 MAR 77	
(
GROUND CREW			
(
NEAR FIELD NOISE LEVELS		PAGE F1	
(
		LOCATION/CONDITION	

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: MEASURED SOUND PRESSURE LEVEL (03)						IDENTIFICATION:	
OCTAVE BAND							
2						OMEGA 3.2	
						TEST 74-074-001	
NOISE SOURCE/SUBJECT:						RUN 01	
(OPERATION:							
(C-119L AIRCRAFT							
(GROUND CREW						04 MAR 77	
(NEAR FIELD NOISE LEVELS						PAGE J1	
						LOCATION/CONDITION	
FREQ (HZ)							
31.5						91 93 91 98 102	
63						95 98 95 101 103	
125						89 85 85 93 92	
250						84 83 83 87 91	
500						84 84 87 92 92	
1000						77 78 78 82 85	
2000						73 70 74 79 84	
4000						70 73 72 75 81	
8000						66 69 68 71 76	
OVERALL						98 100 97 104 105	

TABLE: MEASURES OF HUMAN NOISE EXPOSURE		IDENTIFICATION:	
3			
NOISE SOURCE/SUBJECT:	OPERATION:		
C-119L AIRCRAFT	()	OMEGA 3.2	
GROUND CREW	()	TEST 74-074-001	
NEAR FIELD NOISE LEVELS	()	RUN 01	
	()	04 MAR 77	
	()	PAGE H1	
LOCATION/CONDITION			
1/A	2/A	3/A	4/A 5/A
HAZARD/PROTECTION			
C-WEIGHTED OVERALL SOUND LEVEL (OASLC IN DB) AT EAR			
A-WEIGHTED OVERALL SOUND LEVEL (OASLA IN DB) AT EAR			
MAXIMUM PERMISSIBLE TIME (T IN MINUTES) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)			
NO PROTECTION			
OASLC	37	98	96 102 105
OASLA	84	85	84 89 92
T	480	404	480 202 120
MINIMUM QPL EAR MUFFS			
OASLA*	72	73	71 77 78
T	960	960	960 960 960
AMERICAN OPTICAL 1700 EAR MUFFS			
OASLA*	69	71	68 72 75
T	960	960	960 960 960
V-51R EAR PLUGS			
OASLA*	53	53	53 67 70
T	960	960	960 960 960
AMERICAN OPTICAL 1700 EAR MUFFS PLUS V-51R EAR PLUGS			
OASLA*	52	53	51 57 59
T	960	960	960 960 960
H-133 GROUND COMMUNICATION UNIT			
OASLA*	63	65	63 69 71
T	960	960	960 960 960
COMMUNICATION			
PREFERRED SPEECH INTERFERENCE LEVEL (PSIL IN DB)			
PSIL	78	79	78 83 87
ANNOYANCE			
PERCEIVED NOISE LEVEL, TONE CORRECTED (PNLT IN PND3)			
TONE CORRECTION (C IN DB)			
PNLT	99	101	99 105 108
C	0	0	0 1 1

* BASED ON CALCULATED SPL SPECTRUM UNDER PROTECTIVE DEVICE.

TABLE 4
TEST CONDITIONS
FOR FAR-FIELD NOISE MEASUREMENTS

C-119L Aircraft, Ground Runups, Wright-Patterson AFB, OH
Tail #37884, 26 September 1974

Aircraft Engine Operation

Idle	Both Engines 750 RPM 25 Inches Hg, Manifold Pressure 150 LBS/HR, FF
Taxi Power	Both Engines 1000 RPM 24.5 Inches Hg, MAP 175 LBS/HR, FF
Propeller Speed Check	Both Engines 1800 RPM 26 Inches Hg, MAP 350 LBS/HR, FF
Magneto Check	Both Engines 2100 RPM 28.5 Inches Hg, MAP 550 LBS/HR, FF
Maximum Power	Both Engines 2900 RPM 59 Inches Hg, MAP 2250 LBS/HR, FF

Meteorology

Temperature	20.0 C
Bar Pressure	0.737 M Hg
Rel Humidity	80 %
Wind — Speed	3.6 M/Sec (7 Kts)
— Direction	220 Deg

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)		IDENTIFICATION:																
1/3 OCTAVE BAND																		
DISTANCE = 75 METERS																		
NOISE SOURCE/SUBJECT:																		
(OPERATION:																		
(C-119L AIRCRAFT																		
(R-3350-898 ENGINE																		
(FAR FIELD NOISE																		
(IDLE POWER																		
(750 RPM																		
(BOTH ENGINES																		
TEMP = 20 C																		
BAR PRESS = 737 M HG																		
REL HUMID = 80 %																		
PAGE 2																		
FREQ (HZ)		ANGLE (DEGREES)																
0		10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170 180
25		70<	66<	69<	68<	69<	70<	69<	68<	69<	68<	69<	68<	69<	68<	69<	68<	67<
31.5		71<	71<	72<	72<	73<	73<	71<	70<	72<	70<	71<	71<	73<	73<	70<	72<	69<
40		72<	76<	74<	76<	76<	76<	76<	75<	76<	75<	76<	76<	74<	74<	75<	75<	72<
50		80<	79<	78<	79<	78<	79<	78<	78<	77<	77<	78<	78<	77<	77<	77<	75<	74<
63		75<	75<	75<	78<	77<	78<	77<	76<	76<	76<	76<	74<	75<	78<	74<	73<	69<
80		70<	70<	69<	71<	70<	70<	71<	70<	68<	68<	66<	68<	72<	67<	68<	66<	65<
100		74<	72<	72<	72<	69<	67<	67<	65<	65<	66<	64<	63<	65<	68<	69<	67<	66<
125		71<	68<	71<	70<	68<	67<	68<	65<	63<	64<	64<	62<	65<	66<	67<	68<	65<
160		71<	70<	69<	70<	69<	68<	66<	64<	63<	63<	62<	62<	65<	65<	67<	69<	64<
200		70<	69<	68<	68<	65<	62<	62<	61<	60<	59<	59<	58<	60<	62<	64<	66<	63<
250		68<	67<	66<	66<	62<	60<	59<	54<	53<	54<	53<	55<	59<	60<	62<	65<	61<
315		66<	65<	65<	61<	59<	58<	54<	52<	51<	53<	55<	55<	59<	61<	65<	62<	61<
400		64<	64<	64<	61<	60<	58<	59<	57<	57<	57<	58<	57<	61<	62<	65<	61<	61<
500		61<	61<	61<	61<	62<	60<	57<	51<	52<	59<	59<	59<	54<	57<	60<	61<	58<
630		57<	57<	56<	56<	55<	53<	53<	53<	52<	54<	54<	53<	52<	55<	57<	58<	54<
800		56<	56<	55<	55<	54<	54<	52<	52<	53<	54<	55<	54<	53<	55<	57<	57<	52<
1000		55<	56<	55<	54<	53<	54<	53<	52<	52<	54<	54<	54<	53<	55<	55<	55<	51<
1250		56<	57<	56<	55<	54<	53<	56<	54<	53<	53<	54<	54<	53<	55<	55<	55<	51<
1600		55<	55<	55<	55<	54<	53<	55<	54<	53<	55<	55<	55<	52<	55<	54<	50<	50<
2000		54<	55<	54<	54<	53<	53<	53<	53<	52<	55<	55<	54<	52<	54<	55<	56<	51<
2500		52<	52<	52<	51<	51<	51<	51<	51<	51<	51<	53<	52<	51<	52<	53<	54<	49<
3150		51<	51<	51<	52<	53<	51<	52<	51<	50<	53<	51<	50<	52<	53<	53<	53<	49<
4000		50<	51<	50<	51<	49<	50<	50<	51<	50<	51<	51<	51<	52<	53<	52<	52<	48<
5000		47<	47<	47<	48<	48<	47<	47<	47<	47<	49<	49<	49<	48<	50<	49<	49<	44<
6300		46<	46<	47<	46<	46<	46<	46<	45<	46<	47<	48<	47<	47<	49<	50<	48<	44<
8000		40<	42<	41<	41<	42<	42<	42<	42<	41<	43<	46<	46<	47<	49<	44<	43<	40<
10000		40<	42<	40<	41<	42<	42<	42<	42<	41<	43<	43<	44<	43<	46<	44<	43<	40<
OVERALL		84	84	83	84	83	84	83	82	82	82	82	82	82	83	82	82	80

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)																
1/3 OCTAVE BAND																
DISTANCE = 75 METERS																
NOISE SOURCE/SUBJECT:																
(OPERATION:)																
C-119L AIRCRAFT																
R-3350-898 ENGINE																
FAR FIELD NOISE																
(BOTH ENGINES)																
METEOROLOGY: = 20 C																
BAR PRESS = .737 M HG																
REL HUMID = 80 %																
IDENTIFICATION:																
OMEGA 1.4																
TEST 75-002-018																
RUN 02																
12 AUG 76																
PAGE 2																
FREQ	ANGLE (DEGREES)															
(HZ)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
25	70<	68<	65<	70<	67<	67<	68<	58<	69<	70<	71<	73<	72<	71<	72<	73<
31.5	69<	69<	68<	69<	70<	71<	70<	70<	71<	71<	74<	72<	73<	70<	69<	68<
40	80	79	80	79	80	79	78	77	78	77	78	79	76	76	76	73<
50	76	77	78	77	78	76	77	75	75	71<	74<	73<	72<	76	76	74<
63	80	80	80	82	83	83	84	82	79	78	79	80	81	83	82	78
80	79	78	78	77	78	75	75	73<	74<	72<	71<	71<	72<	73<	74<	71<
100	79	79	80	77	75	75	73	74	77	74	74	72	73	73	75	76
125	79	78	78	76	72	71	70	72	68<	68<	70	72	70	71	72	70
160	79	78	78	76	73	71	72	69	66	67	66	70	71	69	71	73
200	78	77	76	73	69	67	66	63	62	64	64	65	67	67	68	70
250	76	75	75	72	67	63	63	58	58	58	60	61	64	64	67	69
315	74	74	73	70	64	61	57<	57<	56<	56<	59	60	59	62	64	67
400	72	72	71	69	66	62	60	50	63	61	62	63	61	61	64	67
500	68	69	68	66	65	62	60	53	63	62	63	64	61	60	62	66
630	65	64	64	63	62	60	59	57	60	58	60	61	59	59	61	64
800	64	63	63	62	61	60	59	57	60	58	59	59	59	60	62	60
1000	63	62	64	62	60	58	59	57	59	57	58	58	58	59	61	59
1250	63	62	64	61	59	58	59	57	60	57	58	59	58	58	57	59
1600	62	61	62	60	59	57	58	57	60	57	58	58	58	57	58	56
2000	60	59	60	59	58	57	57	56	60	57	58	57	57	56	58	55
2500	59	58	59	58	56	55	56	55	58	54	55	57	55	56	56	54
3150	59	57	59	57	56	55	56	55	57	55	56	56	55	55	56	54
4000	59	57	58	57	56	55	56	55	57	55	56	56	55	56	55	54
5000	56	54	55	54	53	52	53	52	54	51	51	52	51	52	53	51
6300	54	53	55	53	52	52	51	53	50	50	50	51	51	51	51	49
8000	52<	49<	52<	51<	52<	50<	50<	50<	52<	49<	49<	49<	49<	50<	49<	46<
10000	49	47	50	48	47	47	46	45	43	45	45	46	46	45	46	44
OVERALL	89	88	88	87	87	86	86	85	85	83	84	84	85	86	85	84
																82

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE 1 MEASURED SOUND PRESSURE LEVEL (DB)																		
1/3 OCTAVE BAND																		
DISTANCE = 75 METERS																		
NOISE SOURCE/SUBJECT:																		
(OPERATIONS)																		
C-119L AIRCRAFT																		
R-3350-89B ENGINE																		
FAR FIELD NOISE																		
(BOTH ENGINES)																		
METEOROLOGY:																		
TEMP = 20 C																		
BAR PRESS = .737 M HG																		
REL HUMID = 80 %																		
PAGE 2																		
IDENTIFICATION:																		
OMEGA 1.4																		
TEST 75-002-018																		
RUN 03																		
12 AUG 76																		
FREQ (HZ)																		
ANGLE (DEGREES)																		
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180																		
25	69<	70<	71<	69<	70<	70<	71<	71<	71<	74	74	74	74	73	75	70<	68<	70<
31.5	77	76	76	76	76	76	78	79	80	82	83	84	82	79	77	75	77	73
40	90	90	87	88	88	88	88	89	92	96	98	99	97	95	94	89	91	84
50	78	77	78	77	78	75	76	75	74<	76	78	78	77	76	73	73<	73<	71<
63	83	82	85	85	87	86	87	85	82	81	84	82	84	84	84	80	80	79
80	90	93	95	93	94	92	93	92	90	89	89	90	91	90	91	90	90	81
100	91	92	94	94	88	89	95	95	94	94	92	90	91	89	87	89	89	81
125	96	93	95	95	88	84	80	85	85	84	85	84	84	83	85	88	87	80
160	97	95	95	91	86	83	86	97	85	85	86	87	85	83	81	84	87	79
200	95	93	92	88	83	84	85	82	81	81	81	82	82	79	80	82	84	78
250	95	94	92	90	86	83	80	81	79	74	74	76	78	79	78	84	81	78
315	92	91	89	90	86	82	76	73	71	70	72	73	75	75	77	84	83	78
400	91	89	89	88	86	80	80	76	71	72	77	77	76	77	78	84	83	79
500	88	86	86	85	84	80	81	78	75	76	81	80	79	77	77	84	81	79
630	84	84	83	80	81	78	80	78	76	76	79	80	77	77	76	82	81	79
800	83	82	83	80	81	78	79	79	78	76	78	79	77	75	76	81	78	78
1000	82	81	82	81	80	78	77	80	79	75	78	77	76	73	73	79	76	75
1250	81	80	82	81	81	77	77	80	79	75	77	76	75	73	72	77	74	72
1600	81	80	81	80	80	77	77	80	80	74	77	75	75	73	71	75	73	70
2000	79	79	80	79	78	76	76	79	77	72	75	73	73	71	69	71	70	66
2500	78	78	78	78	78	75	75	78	76	70	74	73	71	68	67	69	67	63
3150	78	77	78	77	78	75	75	79	75	71	72	72	70	68	66	66	67	63
4000	78	78	78	79	79	75	75	79	75	71	71	70	69	67	64	66	65	61
5000	76	75	76	77	77	74	72	70	72	58	68	68	66	64	62	63	63	59
6300	75	75	76	77	77	74	71	70	71	67	66	66	65	62	61	61	61	58
8000	73	73	74	75	76	72	70	74	69	65	64	64	62	60	59	59	58	55<
10000	70	71	71	72	73	68	67	70	65	62	61	60	59	57	55	55	55	52
OVERALL	104	102	103	101	99	97	99	99	98	99	100	101	100	98	97	97	97	91

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)																	IDENTIFICATION:	
1/3 OCTAVE BAND																	) OMEGA 1.4	
DISTANCE = 75 METERS																	) TEST 75-002-018	
NOISE SOURCE/SUBJECT:																	) RUN 04	
(OPERATION:																	) METEOROLOGY:	
(MAGNETO CHECK																	) TEMP = 20 C	
(2100 RPM																	) BAR PRESS = .737 M HG	
(BOTH ENGINES																	) REL HUMID = 80 %	
C-119L AIRCRAFT																	) 12 AUG 76	
R-3350-648 ENGINE																	) PAGE 2	
FAR FIELD NOISE																		
FREQ (HZ)																		
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180																		
25	70<	70<	71<	71<	71<	73	72<	71<	73<	72<	73	72<	71<	71<	70<	72<		
31.5	74	74	76	76	77	79	81	78	84	82	80	84	80	78	75	77		
40	90	87	90	89	90	88	85	84	91	93	96	94	97	93	90	87	91	
50	94	96	96	92	96	94	89	31	96	101	104	102	105	100	96	93	94	
63	77	79	84	85	86	85	83	81	79	86	88	82	81	82	86	86		
80	89	85	89	91	90	90	89	96	86	89	90	85	84	87	89	86	87	
100	97	95	97	98	97	97	97	33	94	97	96	83	92	93	95	89	92	
125	95	92	97	97	93	90	90	92	90	91	92	92	87	88	89	87	88	
160	94	93	95	93	91	89	88	87	96	88	89	88	90	87	87	83	82	
200	94	93	96	94	92	91	90	88	84	87	85	85	88	83	86	83	84	
250	96	95	96	93	93	92	91	84	85	82	81	80	81	82	85	82	83	
315	95	92	95	91	88	87	83	79	75	76	76	76	77	79	81	81	82	
400	95	92	95	90	85	82	83	83	77	78	80	80	77	81	81	81	81	
500	93	91	91	89	85	81	83	34	81	82	83	83	80	81	84	83	81	
630	89	88	89	86	84	79	84	95	83	83	84	84	80	80	83	83	81	
800	87	86	88	85	84	80	84	96	84	83	85	81	80	79	82	82	81	
1000	84	84	86	84	84	73	85	35	83	81	83	80	79	78	80	80	80	
1250	84	82	84	85	84	79	86	86	84	80	82	79	79	78	79	79	77	
1600	83	82	83	85	84	79	86	36	83	79	82	79	79	78	78	78	76	
2000	82	81	82	83	82	78	84	34	83	78	80	77	76	75	77	75	73	
2500	80	81	81	82	81	76	84	83	81	76	77	75	74	73	74	71	70	
3150	81	81	82	82	81	77	84	84	80	76	77	76	74	73	74	71	71	
4000	81	81	82	83	82	78	85	84	80	77	76	74	73	72	72	70	70	
5000	79	79	80	81	80	75	82	82	77	74	74	72	71	70	69	67	68	
6300	79	78	80	81	79	75	81	81	77	73	73	70	69	68	69	65	67	
8000	77	77	78	79	77	73	78	79	75	71	70	68	67	67	66	63	64	
10000	74	74	75	76	74	70	76	75	72	68	67	65	64	63	63	60	61	
OVERALL	105	104	106	104	103	102	102	100	101	104	106	103	106	102	101	98	99	
< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.																		

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)																
1/3 OCTAVE BAND																
DISTANCE = 75 METERS																
NOISE SOURCE/SUBJECT:																
(OPERATION:																
(C-119L AIRCRAFT																
(R-3350-898 ENGINE																
(FAR FIELD NOISE																
(BOTH ENGINES																
) METEOROLOGY:																
) TEMP = 20 C																
) BAR PRESS = .737 M HG																
) REL HUMID = 80 %																
) PAGE 2																
) IDENTIFICATION:																
) OMEGA 1.4																
) TEST 75-002-018																
) RUN 05																
) 12 AUG 76																
) 170 180																
) 160 170 180																
) 150 160 170 180																
) 140 150 160 170 180																
) 130 140 150 160 170 180																
) 120 130 140 150 160 170 180																
) 110 120 130 140 150 160 170 180																
) 100 110 120 130 140 150 160 170 180																
) 90 100 110 120 130 140 150 160 170 180																
) 80 90 100 110 120 130 140 150 160 170 180																
) 70 80 90 100 110 120 130 140 150 160 170 180																
) 60 70 80 90 100 110 120 130 140 150 160 170 180																
) 50 60 70 80 90 100 110 120 130 140 150 160 170 180																
) 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180																
) 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180																
) 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180																
) 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180																
) 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180																
) FREQ (HZ)																
) ANGLE (DEGREES)																
) 25																
) 31.5																
) 40																
) 50																
) 63																
) 80																
) 100																
) 125																
) 160																
) 200																
) 250																
) 315																
) 400																
) 500																
) 630																
) 800																
) 1000																
) 1250																
) 1600																
) 2000																
) 2500																
) 3150																
) 4000																
) 5000																
) 6300																
) 8000																
) 10000																
) OVERALL																
) 112 115 115 115 111 111 112 113 117 120 120 119 119 116 115 112 106																

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

(FIGURE: NORMALIZED FARFIELD NOISE LEVELS
 (3 DISTANCE = 100 METERS
 (NOISE SOURCE/SUBJECT: (OPERATION:
 (G-119L AIRCRAFT (IDLE POWER
 (R-3350-89B ENGINE (750 RPM
 (FAR FIELD NOISE (BOTH ENGINES
 (METEOROLOGY: = 15 C
 (TEMP PRESS = .760 M HG
 (REL HUMID = 70 %
 (PAGE 6
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 75-002-010
 (RUN 01
 (12 AUG 76
 (6 = 1000 HZ
 (5 = 500 HZ
 (4 = 250 HZ
 (3 = 125 HZ
 (2 = 63 HZ
 (1 = 31.5 HZ

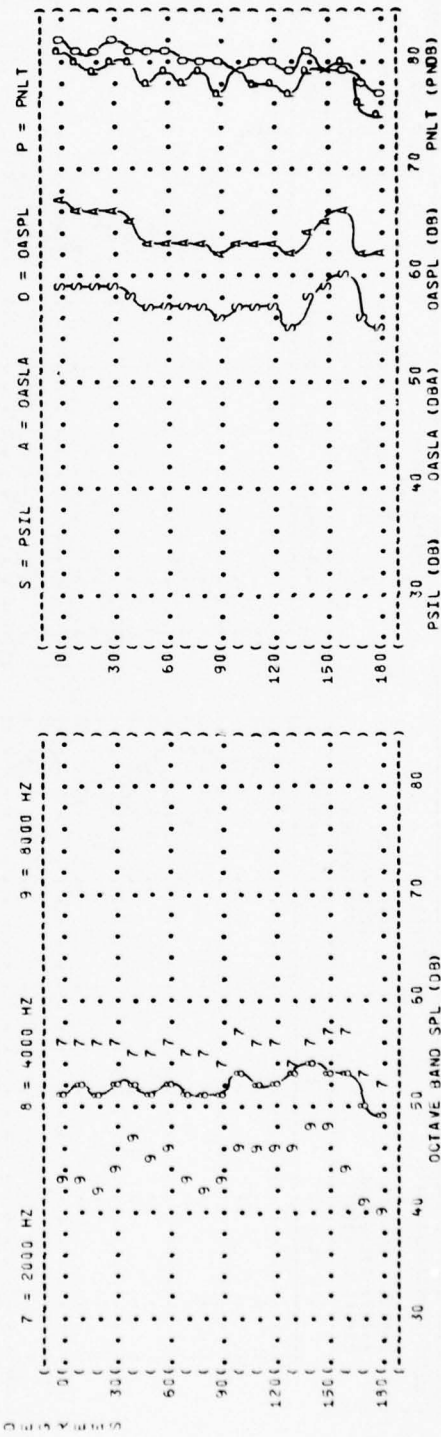
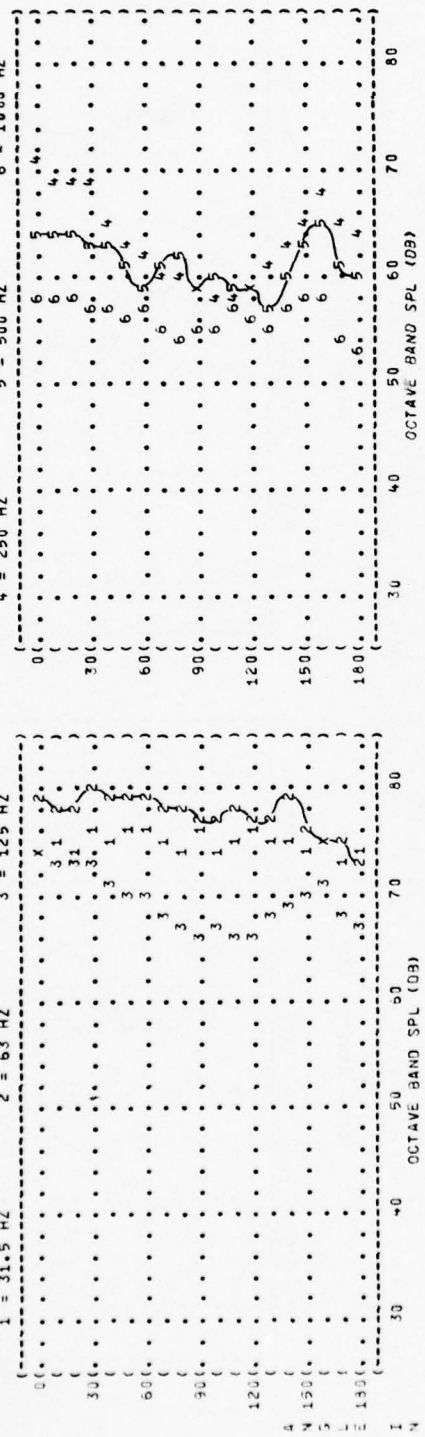


FIGURE 1: NORMALIZED FARFIELD NOISE LEVELS

3 DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:

C-119L AIRCRAFT
R-3350-898 ENGINE
FAR FIELD NOISE

OPERATION:

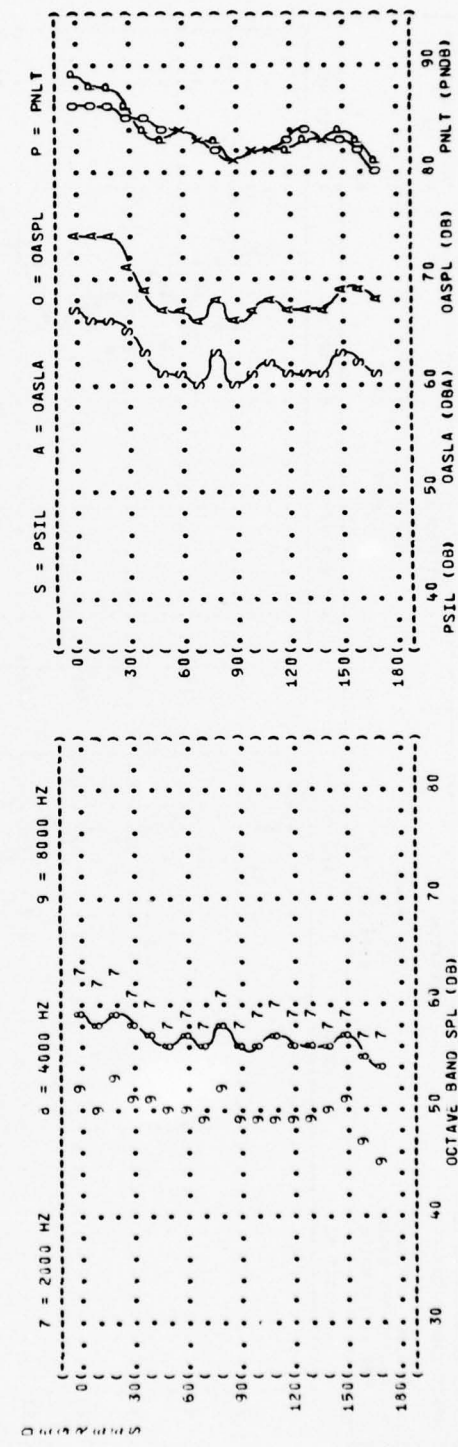
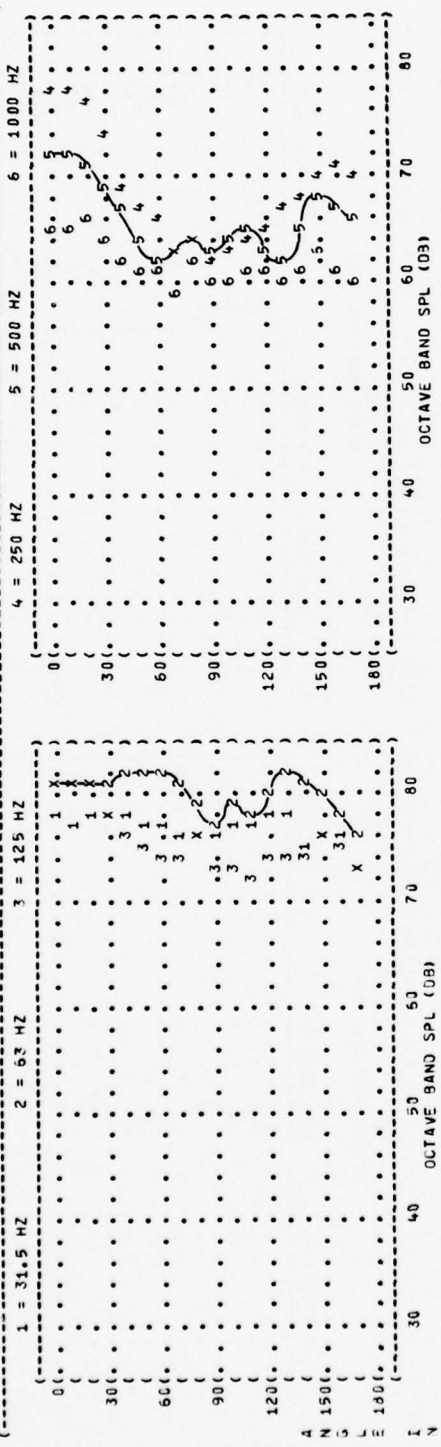
TAXI POWER
1000 RPM
BOTH ENGINES

METEOROLOGY:

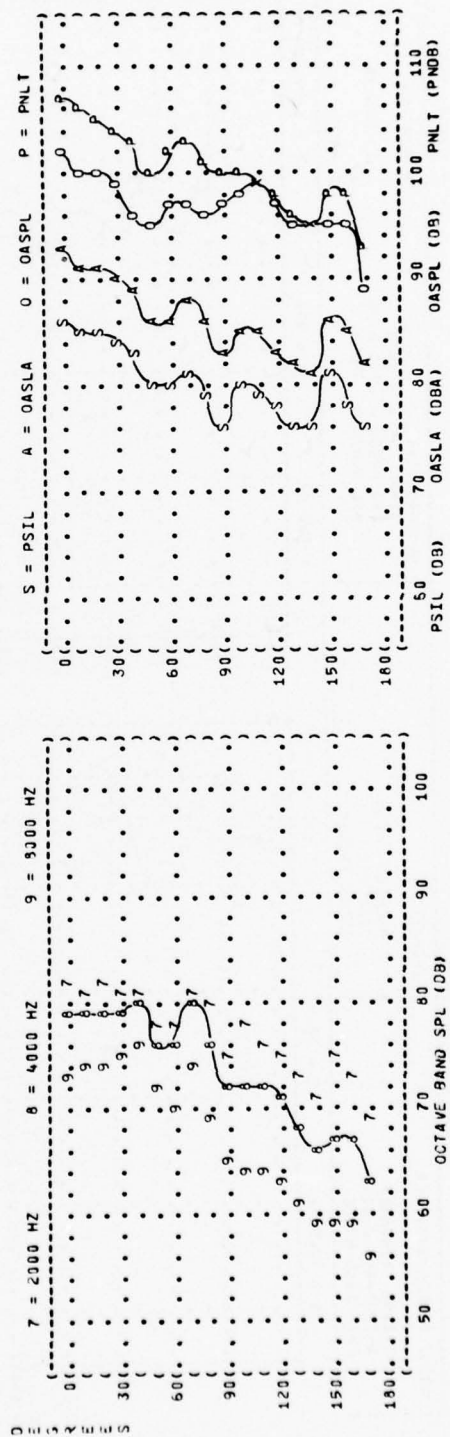
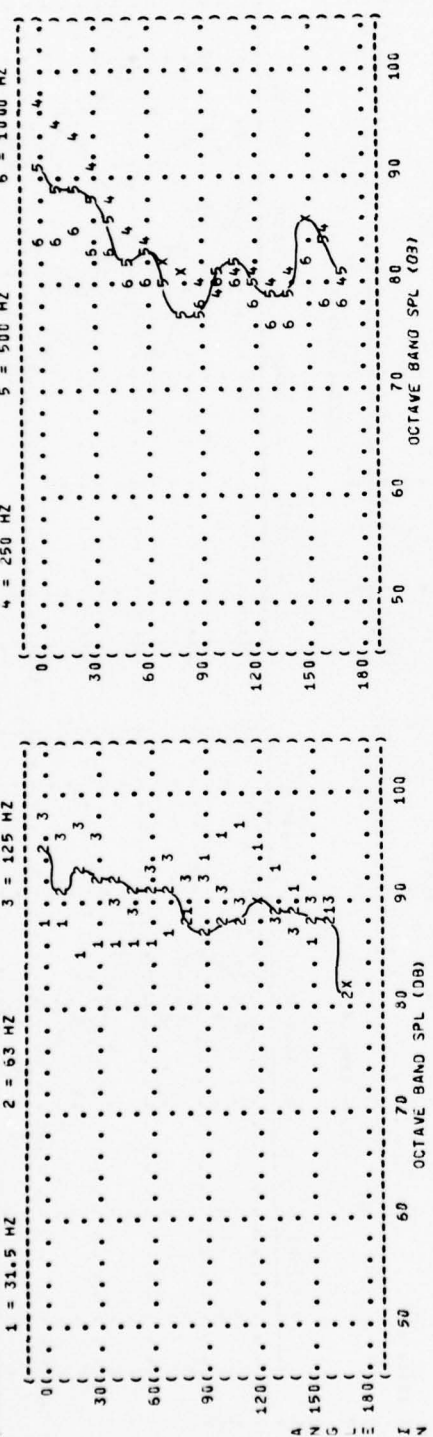
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:

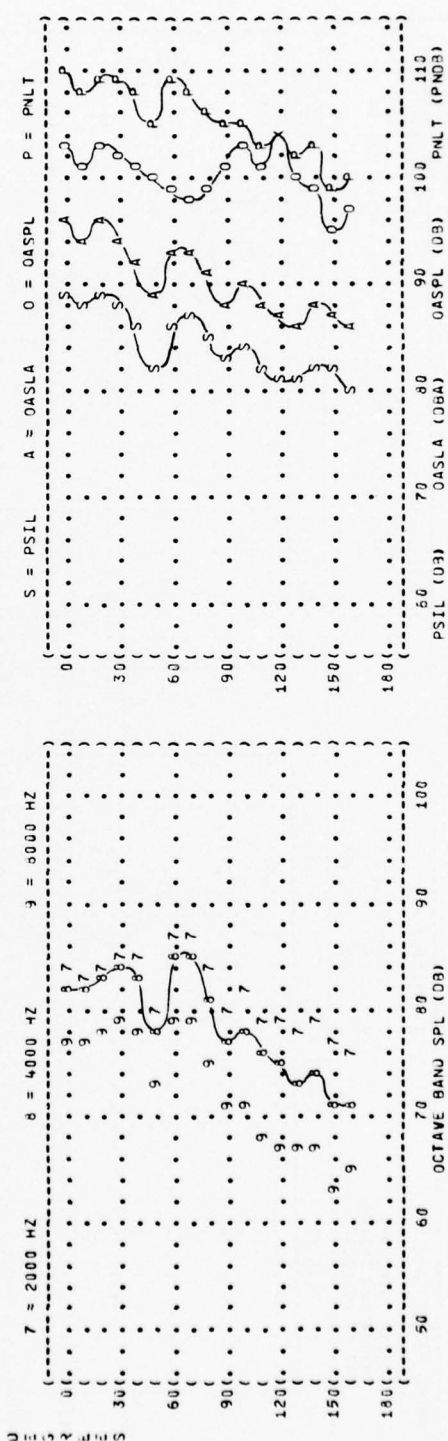
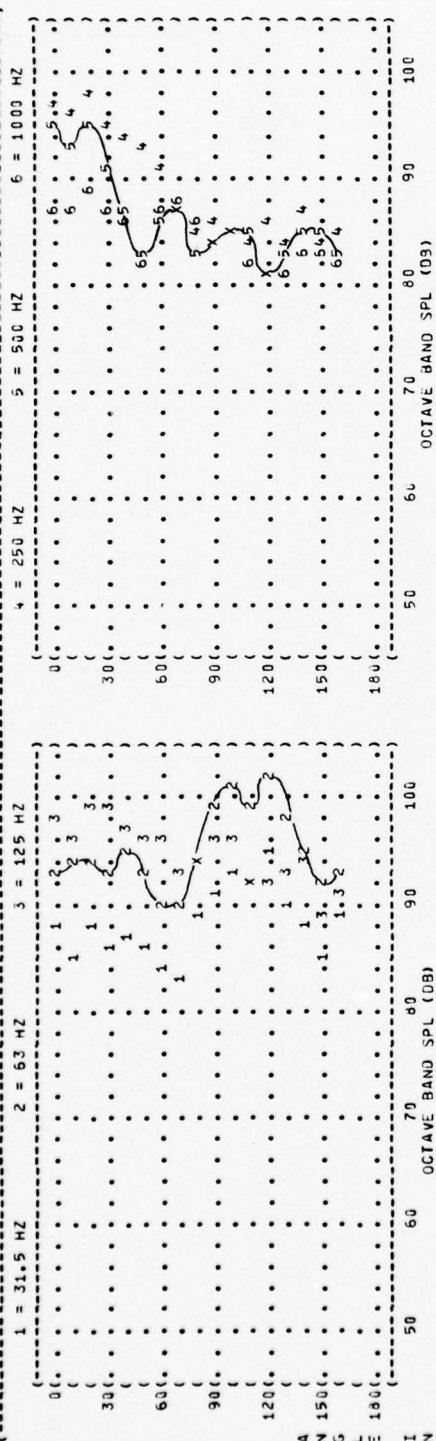
OMEGA 1.4
TEST 75-002-018
RUN 02
12 AUG 76
PAGE 6



(FIGURE: NORMALIZED FARFIELD NOISE LEVELS
 (3 DISTANCE = 100 METERS
 (NOISE SOURCE/SUBJECT: (OPERATION:
 (C-119L AIRCRAFT (PROP SPEED CHECK
 (R-3350-698 ENGINE (1800 RPM
 (FAR FIELD NOISE (BOTH ENGINES
 (1 = 31.5 HZ 2 = 63 HZ 3 = 125 HZ
 (METEOROLOGY: (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (PAGE 6
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 75-002-010
 (RUN 03
 (12 AUG 76
 (



(	FIGURE:	NORMALIZED FARFIELD NOISE LEVELS
(
(		DISTANCE = 100 METERS
(
(		NOISE SOURCE/SUBJECT:
(	C-119L AIRCRAFT	(OPERATION:
(	P-3550-89B ENGINE	(MAGNETO CHECK
(	FAR FIELD NOISE	(2100 RPM
(		( BOTH ENGINES
(
(	METEOROLOGY:	
(	TEMP = 15 C	
(	BAR PRESS = .760 HG	
(	REL HUMID = 70 %	
(
(	IDENTIFICATION:	
(	OMEGA 1.4	
(	TEST 75-002-018	
(	RUN 04	
(
(	12 AUG 76	
(	PAGE 6	
(



) IDENTIFICATION:
) OMEGA 1.4
) TEST 75-002-018
) RUN 05
) 12 AUG 76
) PAGE 6
) METEOROLOGY:
) TEMP = 15 C
) BAR PRESS = .760 M HG
) REL HUMID = 70 %
) DISTANCE = 100 METERS
) NOISE SOURCE/SUBJECT:
) G-119L AIRCRAFT
) P-11350-89B ENGINE
) FAR FIELD NOISE
) OPERATION:
) MAXIMUM POWER
) 2900 RPM
) BOTH ENGINES

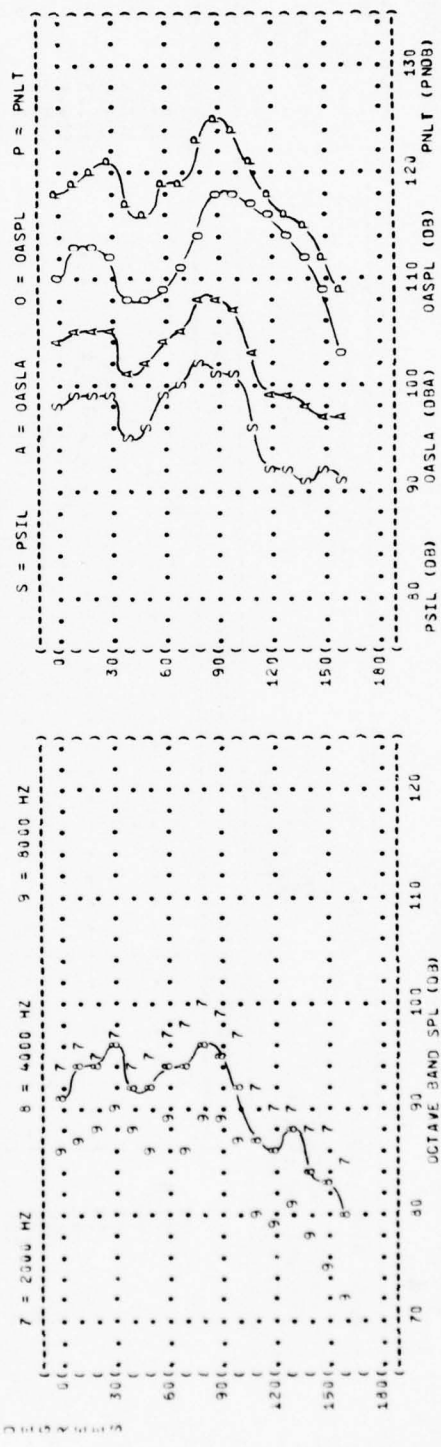
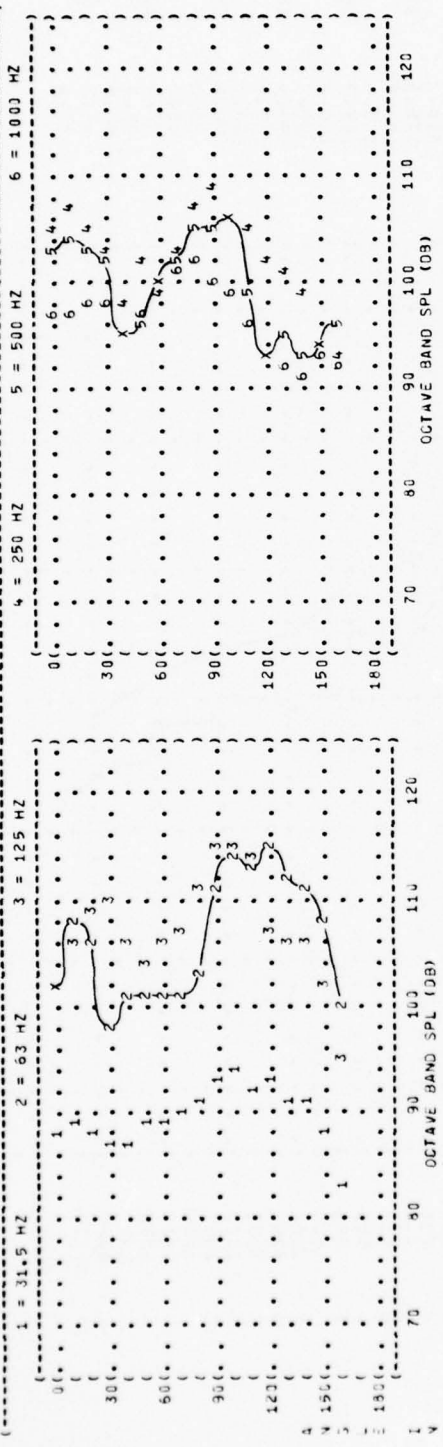
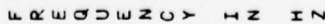
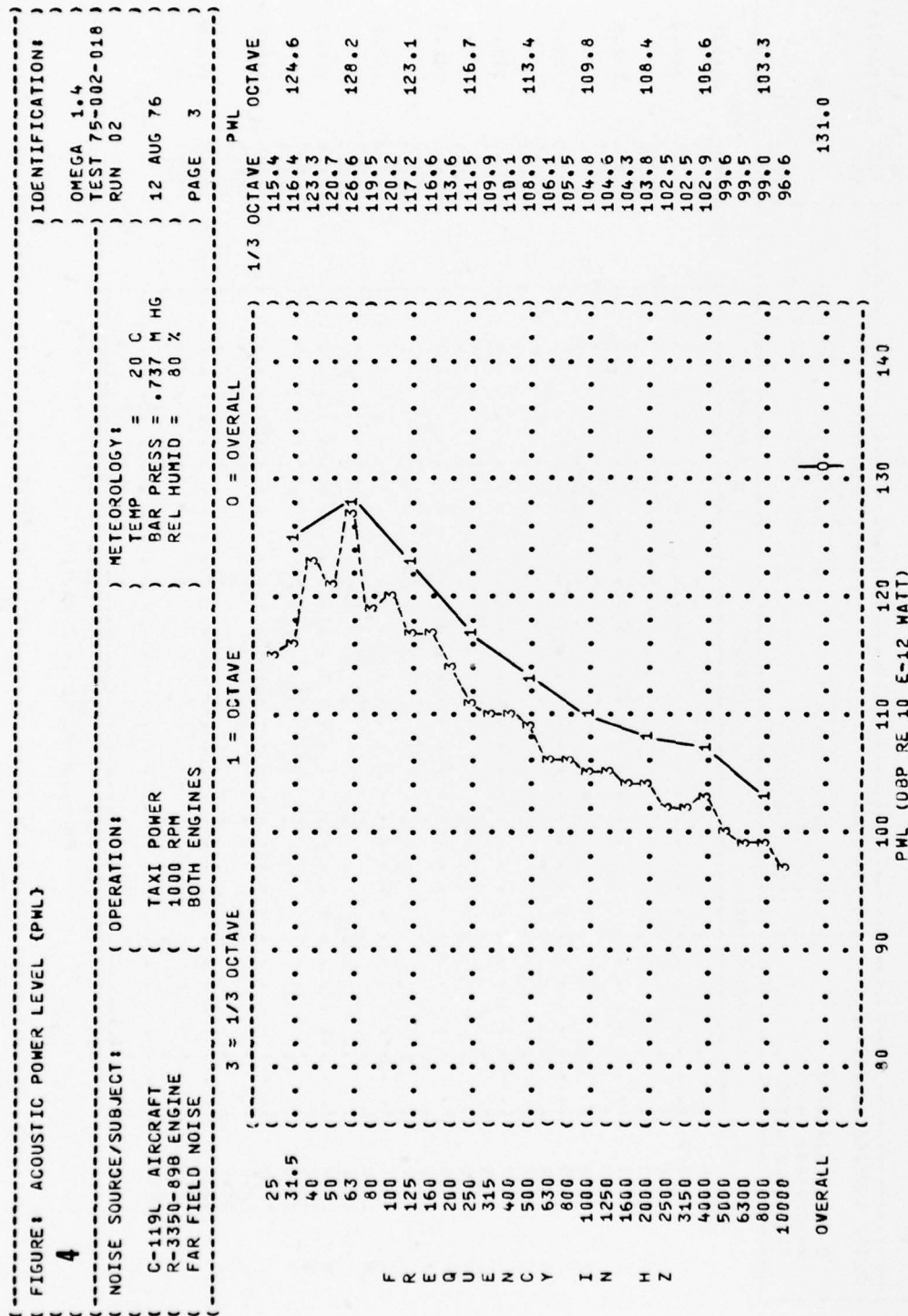
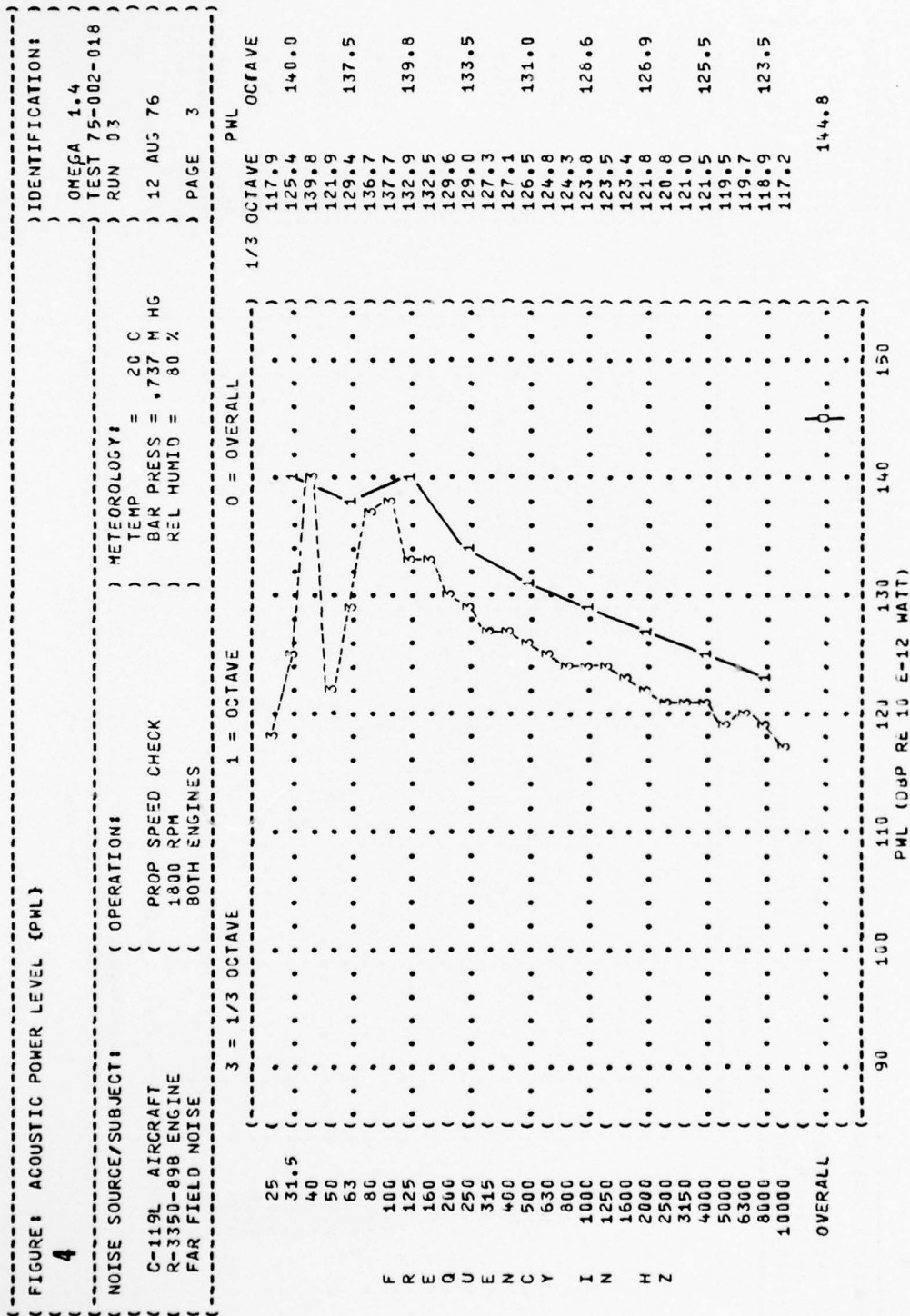


FIGURE: ACOUSTIC POWER LEVEL {PWL}







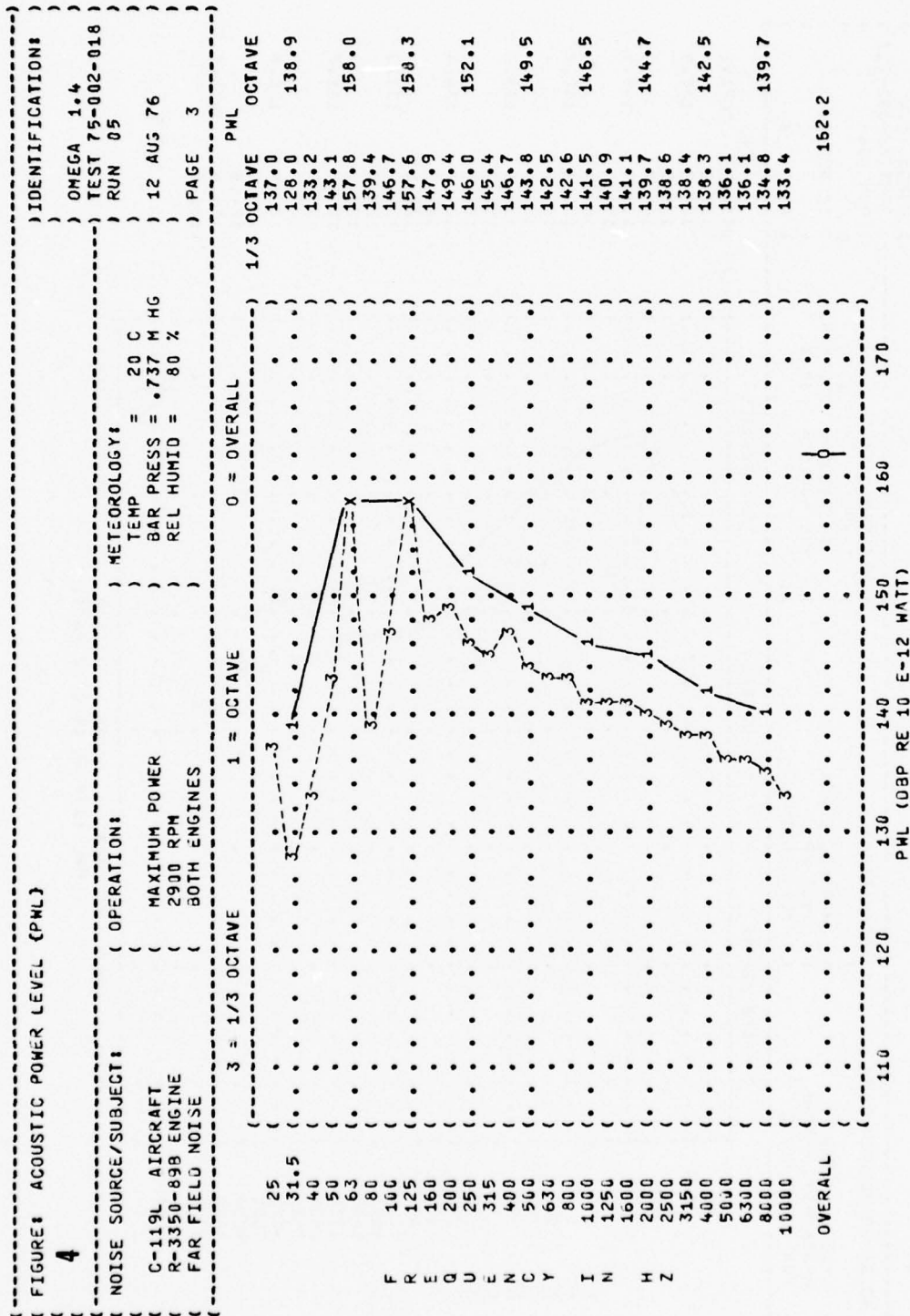


TABLE: DIRECTIVITY INDEX (DB)																		IDENTIFICATION:																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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NOISE SOURCE/SUBJECT:																		TEST 75-002-018																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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(BOTH ENGINES																		PAGE 4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
FREQ																		ANGLE (DEGREES)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
(HZ)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																

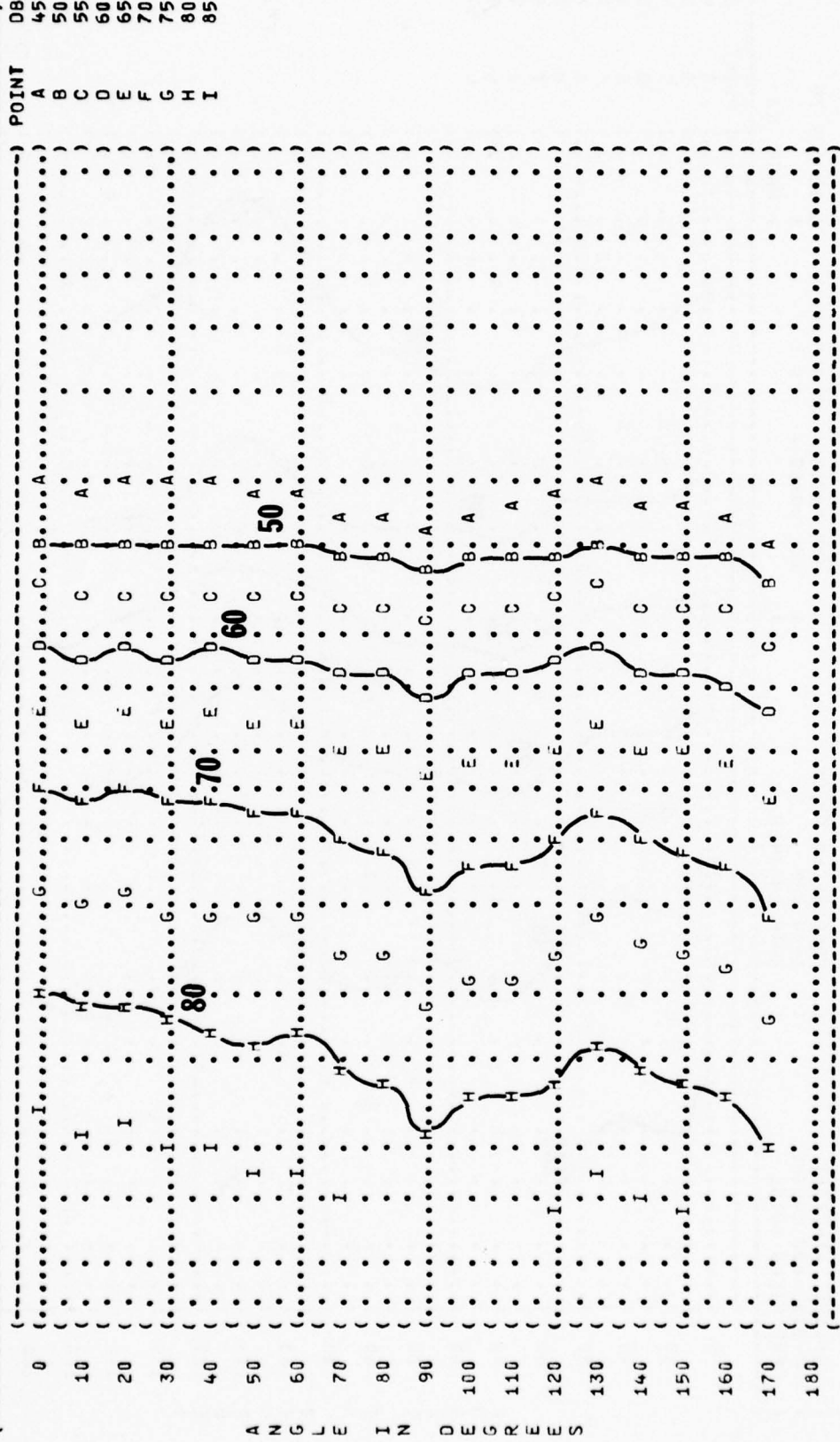
TABLE: DIRECTIVITY INDEX (DB)																		
IDENTIFICATION:																		
6																		
NOISE SOURCE/SUBJECT:																		
C-119L AIRCRAFT																		
R-3350-89B ENGINE																		
FAR FIELD NOISE																		
OPERATION:																		
TAXI POWER																		
1000 RPM																		
BOTH ENGINES																		
METEOROLOGY:																		
TEMP = 20 C																		
BAR PRESS = .737 M HG																		
REL HUMID = 80 %																		
PAGE 4																		
FREQ (HZ)																		
ANGLE (DEGREES)																		
1/3 OCTAVE																		
25	0	-1	-5	-2	-3	-1	-2	-1	-1	-2	-1	-1	-1	-1	-1	-1	-1	-1
31.5	-2	-2	-3	-2	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
40	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1
50	1	1	3	2	2	1	2	1	2	1	2	1	2	1	2	1	2	1
63	-1	-2	-1	0	1	2	2	1	2	1	2	1	2	1	2	1	2	1
80	5	4	4	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0
100	5	4	4	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0
125	7	6	7	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0
160	8	7	6	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0
200	9	8	8	5	1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
250	10	9	9	6	1	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
315	9	10	9	5	-0	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
400	8	8	7	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2
500	5	6	4	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2
630	5	4	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2
800	4	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2
1000	4	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2
1250	4	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2
1600	4	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2
2000	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2
2500	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2
3150	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2
4000	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2
5000	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2
6300	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2
8000	2	-1	2	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2
10000	3	0	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2
OCTAVE																		
31.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
63	1	0	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2
125	6	5	6	3	3	1	-0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
250	10	9	8	5	1	-2	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
500	6	6	5	3	2	-2	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4
1000	4	3	4	2	1	-0	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
2000	3	2	3	2	0	-1	-0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
4000	3	1	3	1	0	-1	-0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6000	3	1	3	1	0	-1	-0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
8000	2	-1	2	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2
10000	3	0	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2
OVERALL																		
3	2	3	3	2	2	1	1	-0	-1	-3	-1	-1	-1	-1	-1	-1	-1	-3

TABLE: DIRECTIVITY INDEX (DB)																			
6																			
NOISE SOURCE/SUBJECT:										IDENTIFICATION:									
C-119L AIRCRAFT										OMEGA 1.4									
R-3350-89B ENGINE										TEST 75-002-018									
FAR FIELD NOISE										RUN 03									
OPERATION:										METEOROLOGY:									
PROP SPEED CHECK										TEMP = 20 C									
1800 RPM										BAR PRESS = .737 M HG									
BOTH ENGINES										REL HUMID = 80 %									
										12 AUG 76									
										PAGE 4									
FREQ (HZ)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
1/3 OCTAVE																			
25	-3	-3	-2	-3	-2	-2	-2	-1	-1	2	2	2	2	1	2	-2	-4	-3	-3
31.5	-3	-4	-4	-4	-4	-4	-2	-1	-0	2	3	4	5	-1	-3	-5	-3	-7	-7
40	-4	-4	-7	-6	-7	-7	-7	-6	-3	1	4	5	5	0	-1	-6	-4	-10	-10
50	1	1	1	1	2	-1	-0	-1	-3	-1	2	2	2	1	0	-4	-4	-5	-5
63	-1	-2	1	1	3	2	3	1	-2	-3	0	-2	-0	0	-0	-4	-4	-5	-5
80	6	2	3	2	2	1	1	1	-1	-3	-2	-2	0	-1	-1	-1	-1	-11	-11
100	-1	-1	2	1	-4	-3	2	3	2	2	0	-3	-3	-5	-3	1	-0	-8	-8
125	9	6	7	7	1	-3	-2	-2	-3	-4	-3	-3	-4	-4	-6	-3	0	-8	-8
160	10	8	8	4	-1	-0	-1	0	-2	-2	-1	0	-2	-4	-5	-2	0	-7	-7
200	11	9	8	4	-1	-0	1	-2	-4	-3	-4	-2	-3	-5	-5	-2	0	-7	-7
250	12	10	9	6	2	-0	-3	-3	-4	-9	-10	-7	-5	-5	-6	0	-2	-6	-6
315	10	9	7	8	4	-0	-6	-9	-11	-12	-10	-9	-7	-7	-5	2	1	-4	-4
400	10	7	7	7	5	-1	-2	-5	-10	-10	-5	-4	-5	-5	-4	3	0	-2	-2
500	7	5	5	4	3	-1	0	-3	-6	-5	-0	-1	-2	-4	-4	3	0	-2	-2
630	5	5	4	1	2	-1	1	-1	-3	-3	1	1	-2	-3	-4	3	1	-1	-1
800	4	4	4	1	2	-1	1	-0	-1	-3	0	0	-1	-2	-5	1	-2	-3	-3
1000	4	3	4	3	2	-0	-1	2	1	-3	-1	-1	-2	-4	-6	-1	-2	-3	-3
1250	3	3	4	3	3	-1	-1	2	1	-3	0	-1	-2	-5	-6	-2	-4	-6	-6
1600	4	3	4	3	3	0	-0	3	2	-3	0	-2	-2	-4	-6	-2	-4	-8	-8
2000	3	3	4	3	2	0	0	3	2	-3	-1	-3	-3	-5	-7	-5	-6	-10	-10
2500	3	3	3	3	3	1	1	3	1	-4	-2	-4	-4	-6	-8	-6	-7	-11	-11
3150	3	3	4	3	3	1	1	4	1	-4	-2	-3	-4	-7	-9	-8	-8	-12	-12
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5000	3	3	4	4	5	2	-0	4	-1	-4	-4	-4	-5	-8	-10	-9	-10	-13	-13
6300	3	3	4	5	6	2	0	4	-1	-5	-6	-5	-7	-9	-11	-11	-10	-14	-14
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10000	3	4	4	5	6	1	0	3	-2	-5	-6	-7	-8	-10	-12	-12	-12	-15	-15
OCTAVE																			
31.5	-4	-4	-7	-6	-7	-6	-6	-5	-3	2	4	5	3	0	-1	-6	-3	-10	-10
50	6	1	3	2	2	1	2	1	-1	-3	-2	-2	0	-1	-1	-1	-1	-9	-9
125	6	4	5	6	2	-3	1	2	0	0	-1	-2	-2	-4	-5	-2	-2	-10	-10
250	11	9	8	6	2	-0	-1	-3	-5	-6	-6	-4	-4	-5	0	0	-0	-6	-6
500	8	6	6	5	4	-1	-0	-3	-6	-6	-1	-1	-3	-4	-4	3	1	-2	-2
1000	4	3	4	3	3	0	-0	1	-3	-0	-1	-1	-2	-3	-4	1	-2	-3	-3
2000	4	3	4	4	4	1	0	3	2	-4	-3	-4	-3	-5	-7	-4	-5	-9	-9
4000	3	3	4	4	4	1	0	4	0	-4	-4	-4	-5	-7	-9	-9	-9	-12	-12
8000	3	3	4	5	6	2	0	4	-1	-5	-6	-6	-8	-10	-11	-11	-11	-14	-14
10000	3	3	4	5	6	2	0	4	-1	-5	-6	-7	-8	-10	-12	-12	-12	-15	-15
OVERALL	5	3	3	2	-0	-2	-0	-0	-1	-0	1	2	0	-2	-2	-2	-2	-8	-8

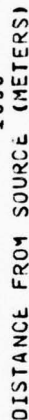
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TABLE: DIRECTIVITY INDEX (DB)																
IDENTIFICATION:																
6																
NOISE SOURCE/SUBJECT:																
G-119L AIRCRAFT																
R-3350-89B ENGINE																
FAR FIELD NOISE																
OPERATION:																
MAXIMUM POWER																
2900 RPM																
BOTH ENGINES																
METEOROLOGY:																
TEMP = 20 C																
BAR PRESS = .737 M HG																
REL HUMID = 80 %																
PAGE 4																
FREQ (HZ)																
ANGLE (DEGREES)																
1/3 OCTAVE																
25	-4	-4	-7	-10	-8	-3	-3	1	3	3	3	3	3	3	3	-5
31.5	1	1	1	1	-2	-2	-2	0	1	0	0	0	0	0	0	-1
40	-2	-1	-1	-0	-2	-1	-2	-1	1	1	1	1	1	1	1	-2
50	-7	-3	-4	-7	-5	-4	-3	-3	1	4	3	4	2	1	1	-3
63	-8	-2	-4	-15	-10	-10	-10	-8	1	4	3	5	2	1	1	-10
80	-0	0	0	0	-1	-3	-3	-2	2	2	0	3	2	1	1	-8
100	-7	-3	-3	-0	-6	-10	-7	-4	1	5	4	4	-6	-2	-2	-11
125	-14	-7	-3	-0	-2	-2	-2	-1	-1	1	1	1	1	1	1	-12
160	-4	2	0	-4	-5	-2	-1	-1	3	4	4	4	4	4	4	-9
200	-1	2	-1	-4	-5	-2	-3	-2	6	2	2	2	2	2	2	-11
250	3	3	3	1	-7	-3	-5	-2	1	6	2	-2	-2	-5	-3	-9
315	2	5	2	1	-7	-8	-6	-4	3	4	4	4	4	4	4	-10
400	2	3	2	-1	-7	-8	-5	-1	3	4	5	-2	-9	-6	-8	-8
500	2	3	2	2	-6	-4	-0	1	3	4	2	-2	-8	-6	-7	-4
630	2	1	2	0	-5	-3	1	3	4	2	1	-3	-7	-6	-7	-5
800	-0	-1	0	-1	-4	-2	2	2	2	2	1	-3	-7	-6	-7	-5
1000	-1	-1	-0	0	-3	-1	2	2	2	2	1	-3	-5	-6	-7	-5
1250	-1	-1	-0	0	-2	-1	1	2	2	2	1	-3	-5	-6	-7	-6
1600	-2	-1	-1	1	-2	-1	1	2	2	3	1	-4	-6	-8	-7	-10
2000	-2	-0	-1	1	-1	-1	1	2	4	3	1	-4	-6	-8	-7	-10
2500	-2	0	0	2	-1	-0	1	2	4	3	1	-5	-6	-9	-10	-12
3150	-1	1	1	3	0	0	2	1	4	2	-0	-5	-6	-5	-8	-13
4000	-1	1	2	3	0	0	2	1	4	2	-0	-5	-7	-4	-8	-13
5000	-0	1	2	4	1	-0	2	1	3	3	-0	-5	-7	-4	-8	-14
6300	-1	1	2	3	1	-0	2	0	3	3	-0	-6	-7	-5	-9	-12
8000	0	1	2	3	1	-0	3	0	3	2	1	-6	-7	-5	-8	-13
10000	-1	1	2	3	1	-0	4	-0	2	2	2	-6	-8	-5	-9	-15
OCTAVE																
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63	-8	-2	-4	-12	-10	-9	-9	-10	-7	1	4	3	5	2	1	-10
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500	2	3	2	0	-6	-6	-2	1	3	4	4	-2	-9	-7	-7	-5
1000	-1	-1	-0	-0	-3	-2	1	2	4	2	1	-3	-6	-6	-6	-6
2000	-2	-0	-0	1	-1	-1	1	2	4	3	1	-4	-6	-8	-8	-11
4000	-1	1	2	3	-0	0	2	1	3	2	-0	-5	-7	-5	-8	-13
8000	-0	1	2	3	1	-0	3	0	3	3	2	-6	-7	-5	-9	-12
10000	-1	1	2	3	1	-0	4	-0	2	2	2	-6	-8	-5	-9	-13
OVERALL																
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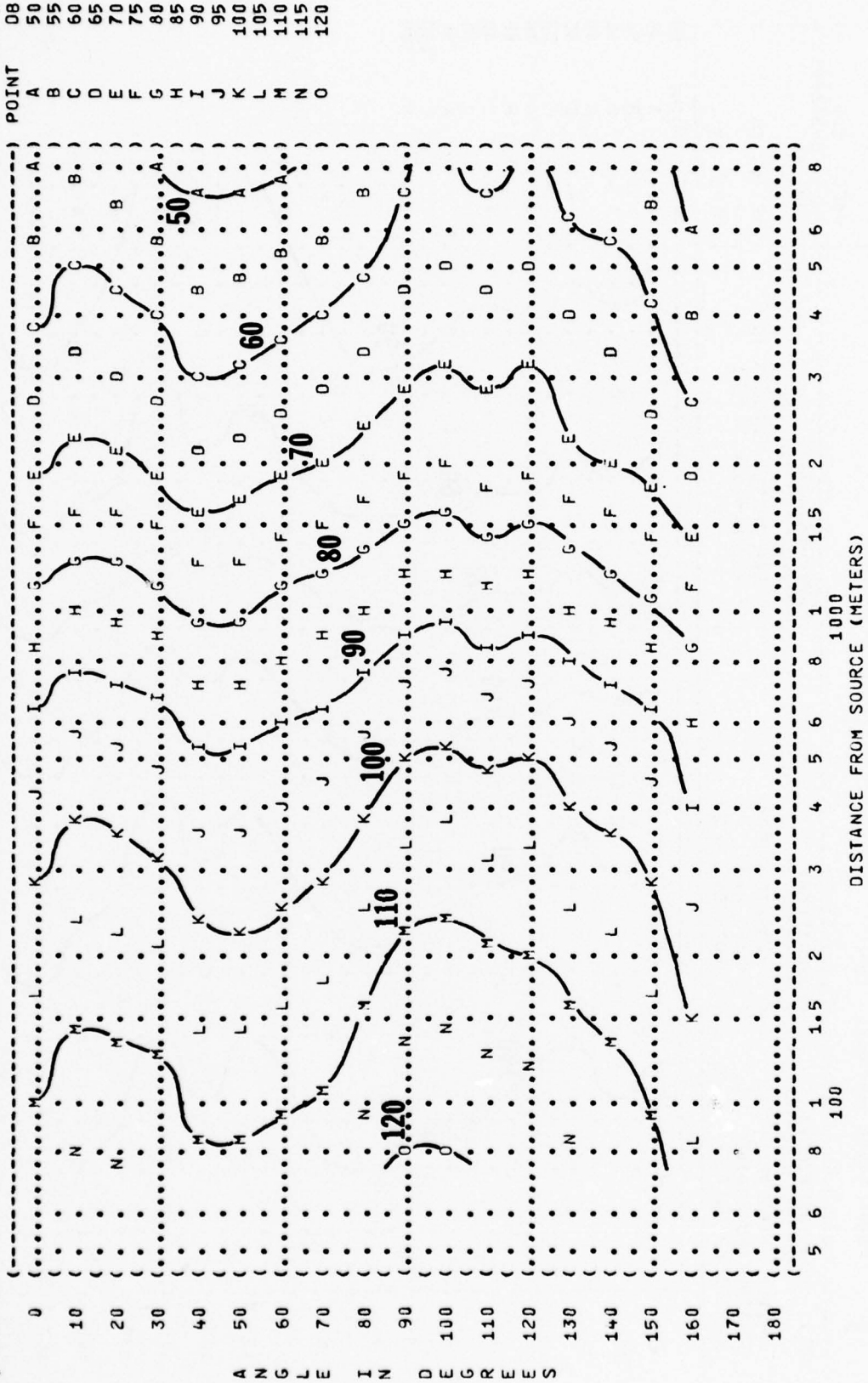
(FIGURE: OVERALL SOUND PRESSURE LEVEL (OASPL))
 (5)
 (NOISE SOURCE/SUBJECT:)
 (C-119L AIRCRAFT)
 (R-3350-698 ENGINE)
 (FAR FIELD NOISE)
 (OPERATION:)
 (TAXI POWER)
 (1000 RPM)
 (BOTH ENGINES)
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 75-002-018)
 (RUN 02)
 (12 AUG 76)
 (PAGE 13)



DISTANCE FROM SOURCE (METERS)



(FIGURE: OVERALL SOUND PRESSURE LEVEL (OASPL))
 (5 EQUAL LEVEL CONTOURS (DB))
 (NOISE SOURCE/SUBJECT:)
 (C-119L AIRCRAFT)
 (R-3350-89B ENGINE)
 (FAR FIELD NOISE)
 (OPERATION:)
 (MAXIMUM POWER)
 (2900 RPM)
 (BOTH ENGINES)
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 75-002-018)
 (RUN 05)
 (12 AUG 76)
 (PAGE 13)

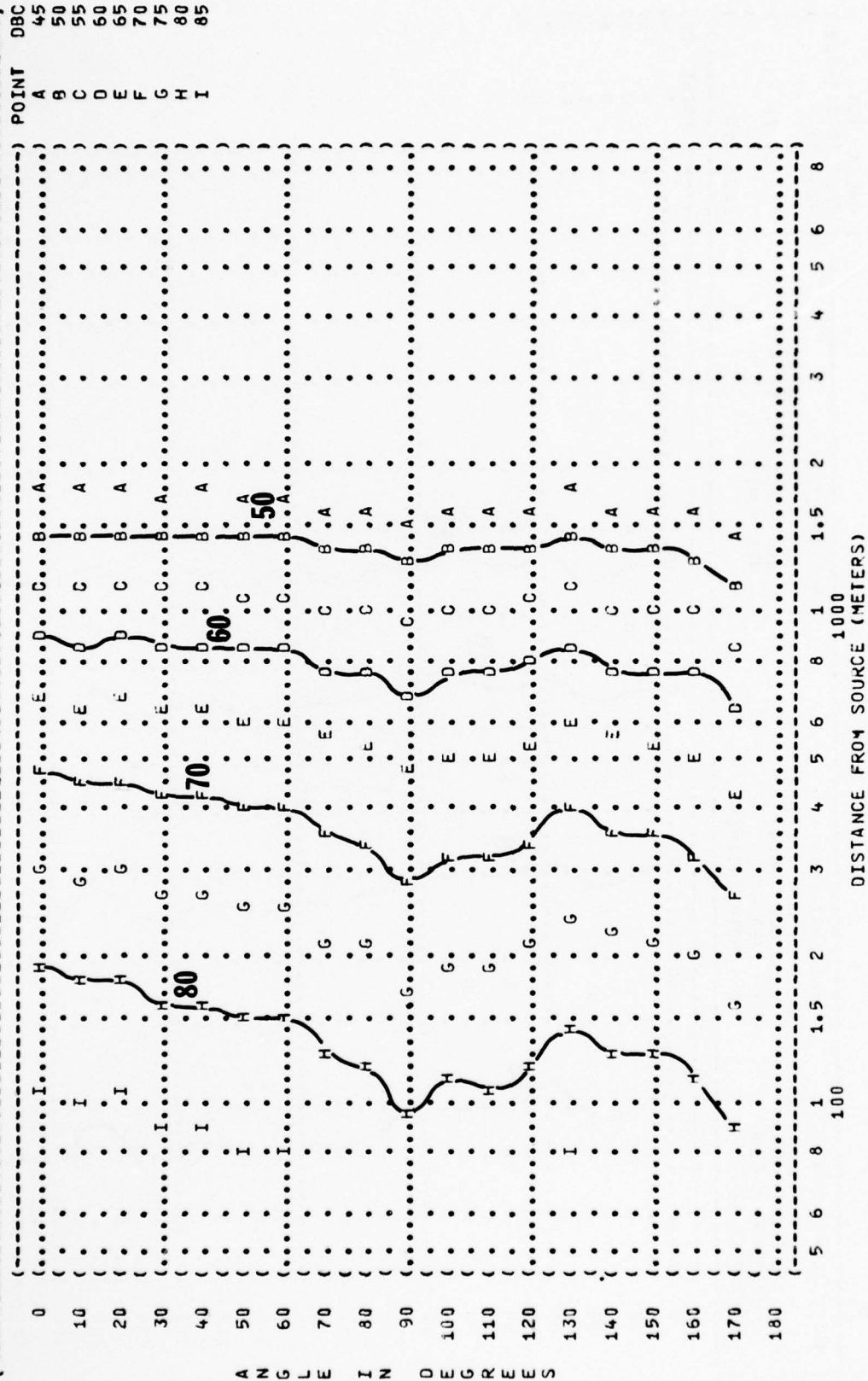


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(-----)
( ( FIGURE: C-WEIGHTED OVERALL SOUND LEVEL {OASLC})
(      EQUAL LEVEL CONTOURS (DBC)
(
(      6
(-----)
( ( NOISE SOURCE/SUBJECT:
(      ( OPERATION:
(      ( TAXI POWER
(      ( R-3350-898 ENGINE
(      ( 1000 RPM
(      ( FAR FIELD NOISE
(      ( BOTH ENGINES
(
( METEOROLOGY:
(      TEMP = 15 C
(      BAR PRESS = .760 M HG
(      REL HUMID = 70 %
(
( IDENTIFICATION:
(      OMEGA 1.4
(      TEST 75-002-018
(      RUN 02
(      PAGE 14
(-----)
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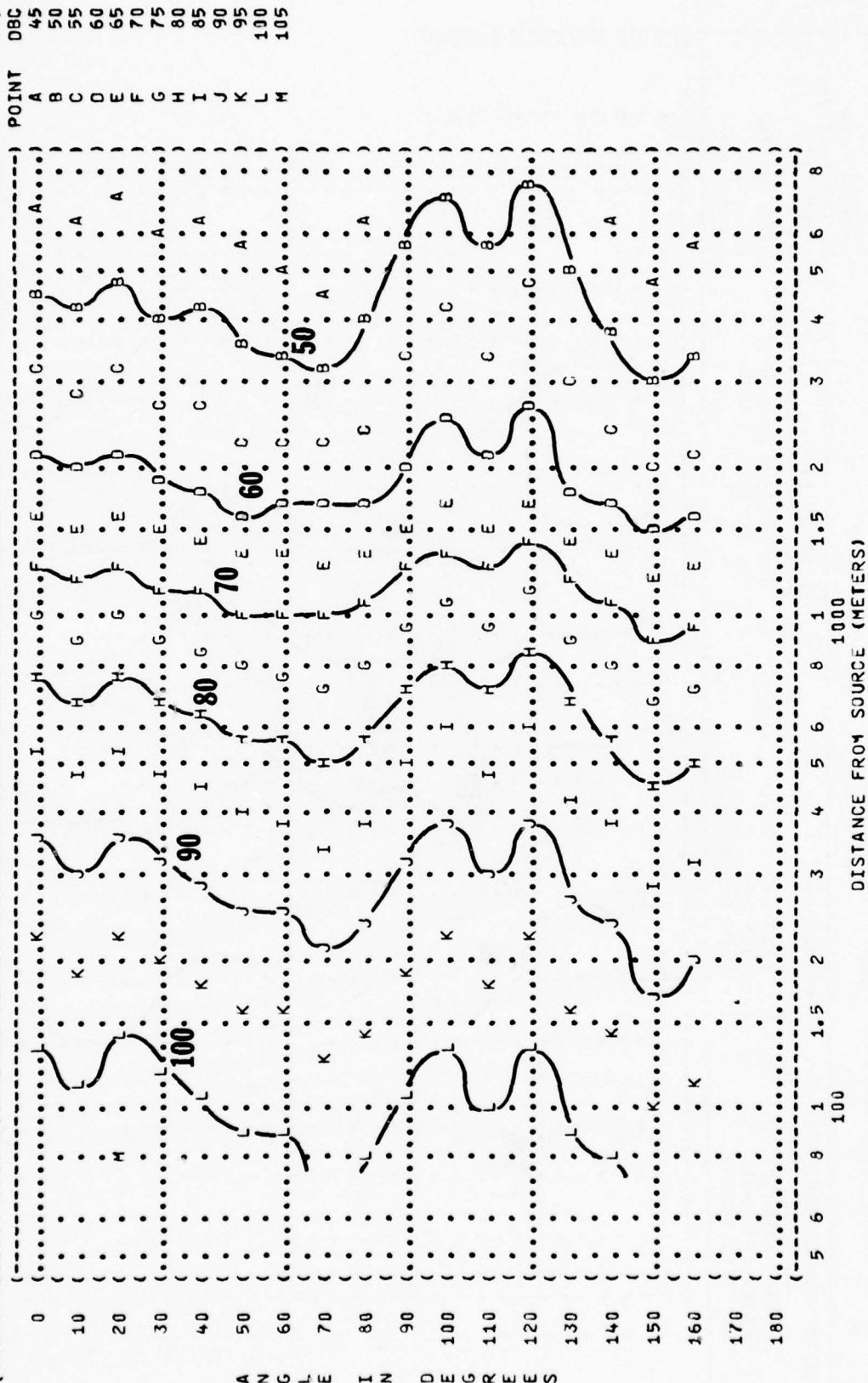


ANGLE IN DEGREES

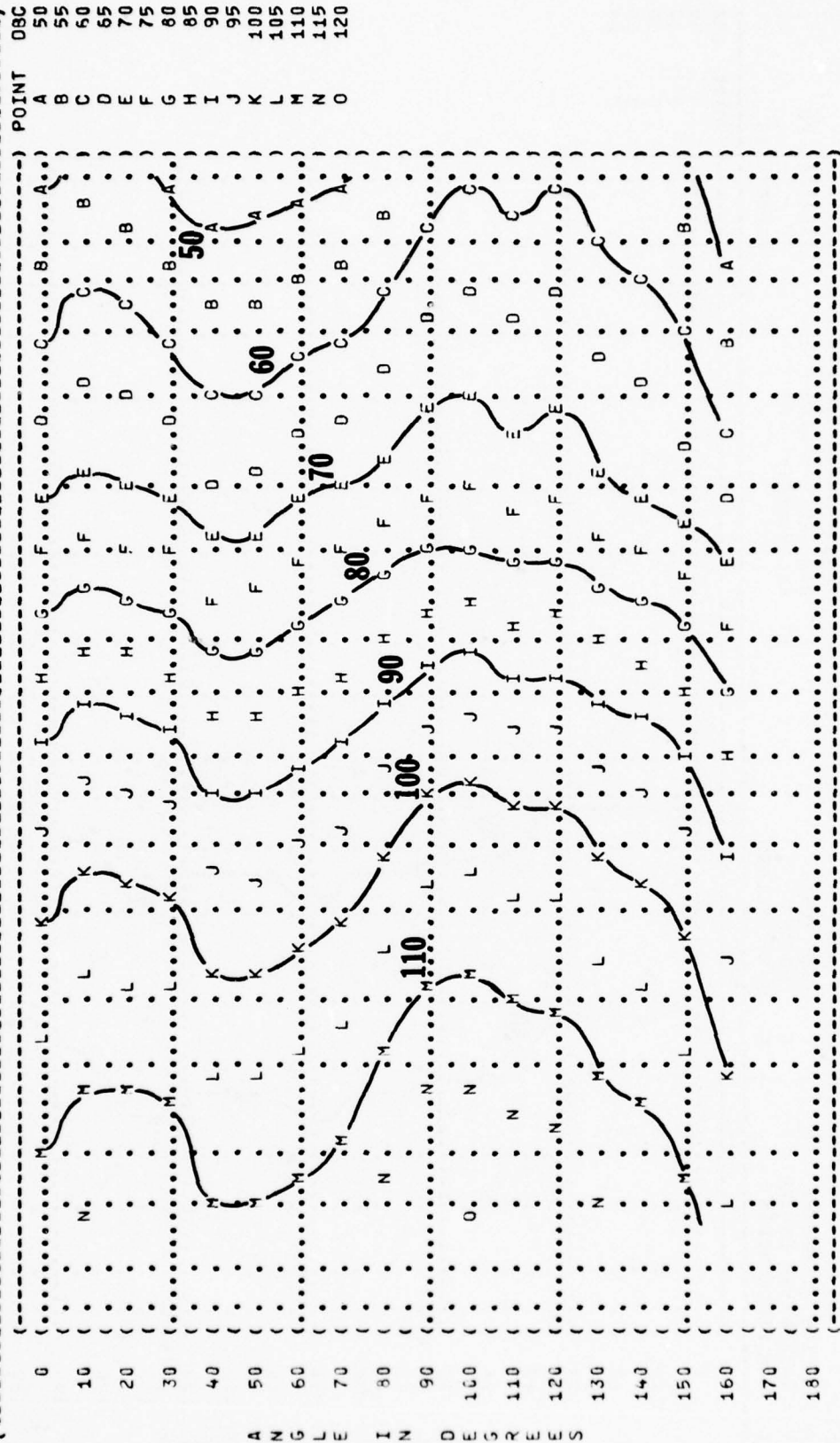

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( ( FIGURE: C-WEIGHTED OVERALL SOUND LEVEL {OASLC}
( ( EQUAL LEVEL CONTOURS (DBC)
( (
( ( 6
( (
( ( NOISE SOURCE/SUBJECT: ( OPERATION: ) METEOROLOGY: ) IDENTIFICATION: )
( ( ( ( ( TEMP = 15 C ) ) )
( ( C-119L AIRCRAFT ( MAGNETO CHECK ) ) BAR PRESS = .760 M HG ) 12 AUG 76
( ( R-3350-89B ENGINE ( 2100 RPM ) ) REL HUMID = 70 % ) )
( ( FAR FIELD NOISE ( BOTH ENGINES ) ) ) PAGE 14
( (
( (

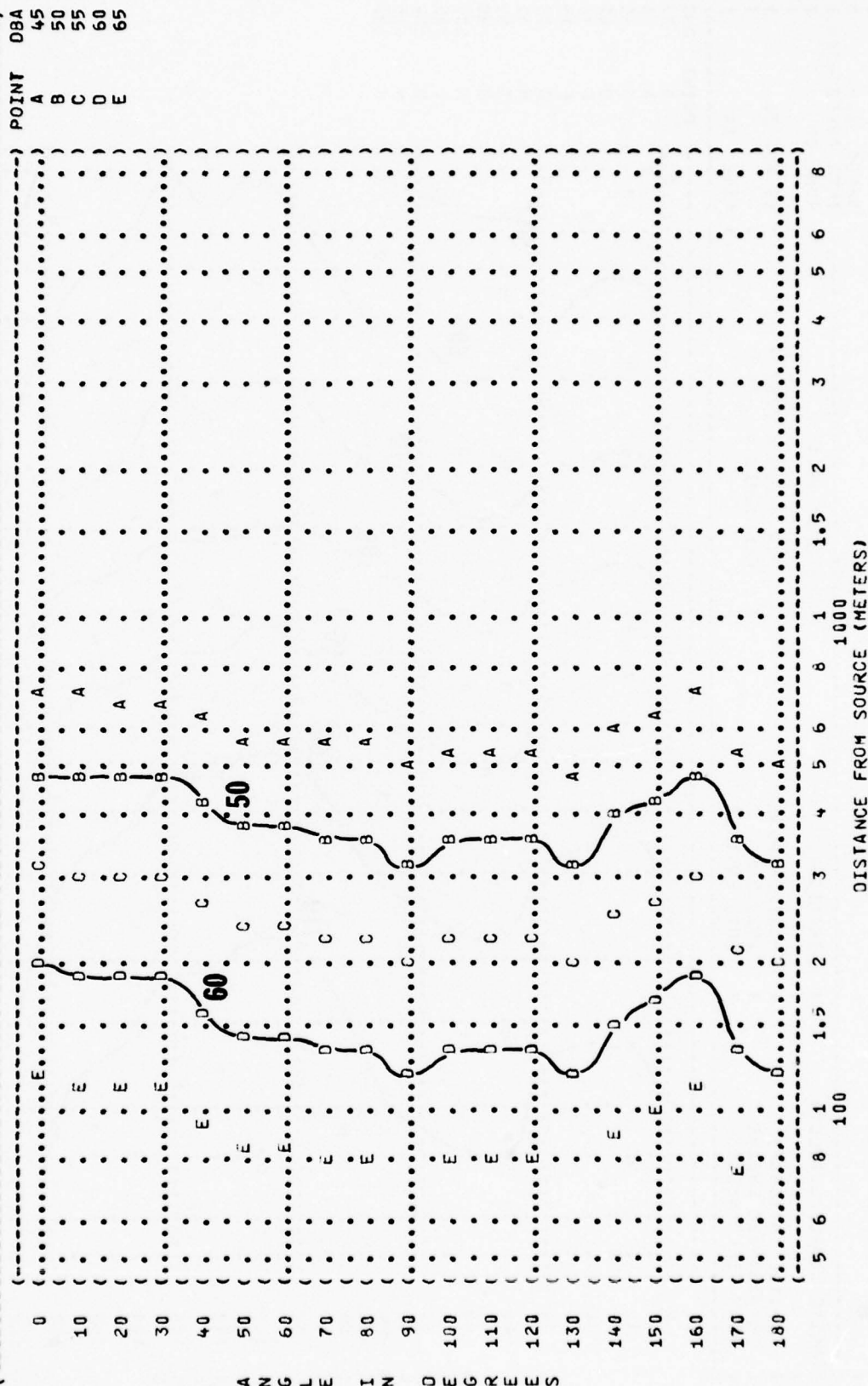
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(FIGURE: C-WEIGHTED OVERALL SOUND LEVEL (OASLC))
 (6)
 (NOISE SOURCE/SUBJECT:)
 (C-119L AIRCRAFT)
 (R-3350-89B ENGINE)
 (FAR FIELD NOISE)
 (OPERATION:)
 (MAXIMUM POWER)
 (2900 RPM)
 (BOTH ENGINES)
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 75-002-018)
 (RUN 05)
 (12 AUG 76)
 (PAGE 14)



(FIGURE: A-WEIGHTED OVERALL SOUND LEVEL (OASLA))
 (7)
 (NOISE SOURCE/SUBJECT:)
 (C-119L AIRCRAFT)
 (R-3350-89B ENGINE)
 (FAR FIELD NOISE)
 (OPERATION:)
 (IDLE POWER)
 (750 RPM)
 (BOTH ENGINES)
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 75-002-018)
 (RUN 01)
 (12 AUG 76)
 (PAGE 15)
 (POINT DBA)
 (A 45)
 (B 50)
 (C 55)
 (D 60)
 (E 65)




```

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-018
RUN 02
12 AUG 76
PAGE 15

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OMEGA 1.4
TEST 75-002-018
RUN 02
12 AUG 76
PAGE 15

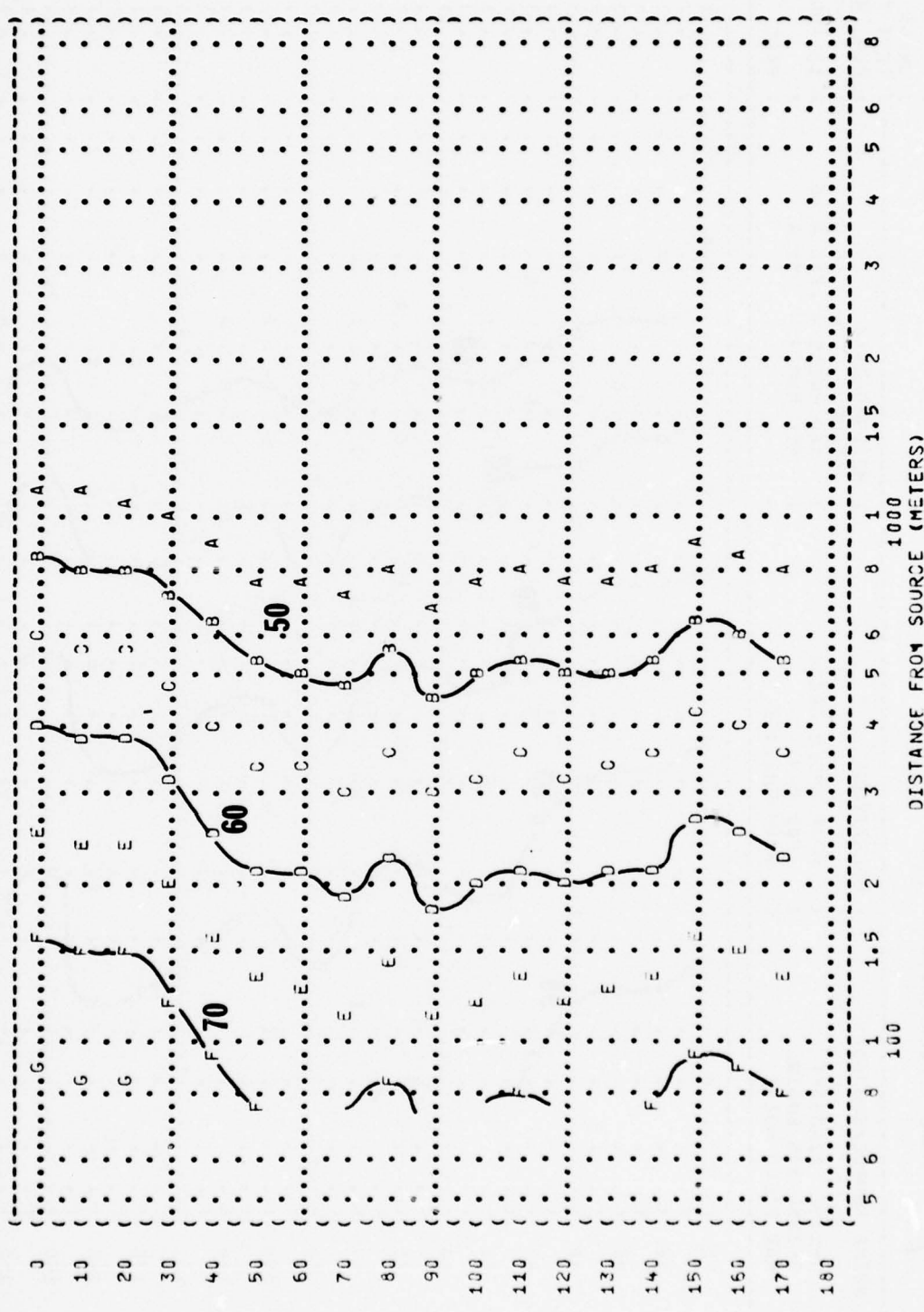
) RUN 02)
)))
) 12 AUG 76)
)))
) PAGE 15)

TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

ERATION:
TAXI POWER
1000 RPM
BOTH ENGINES

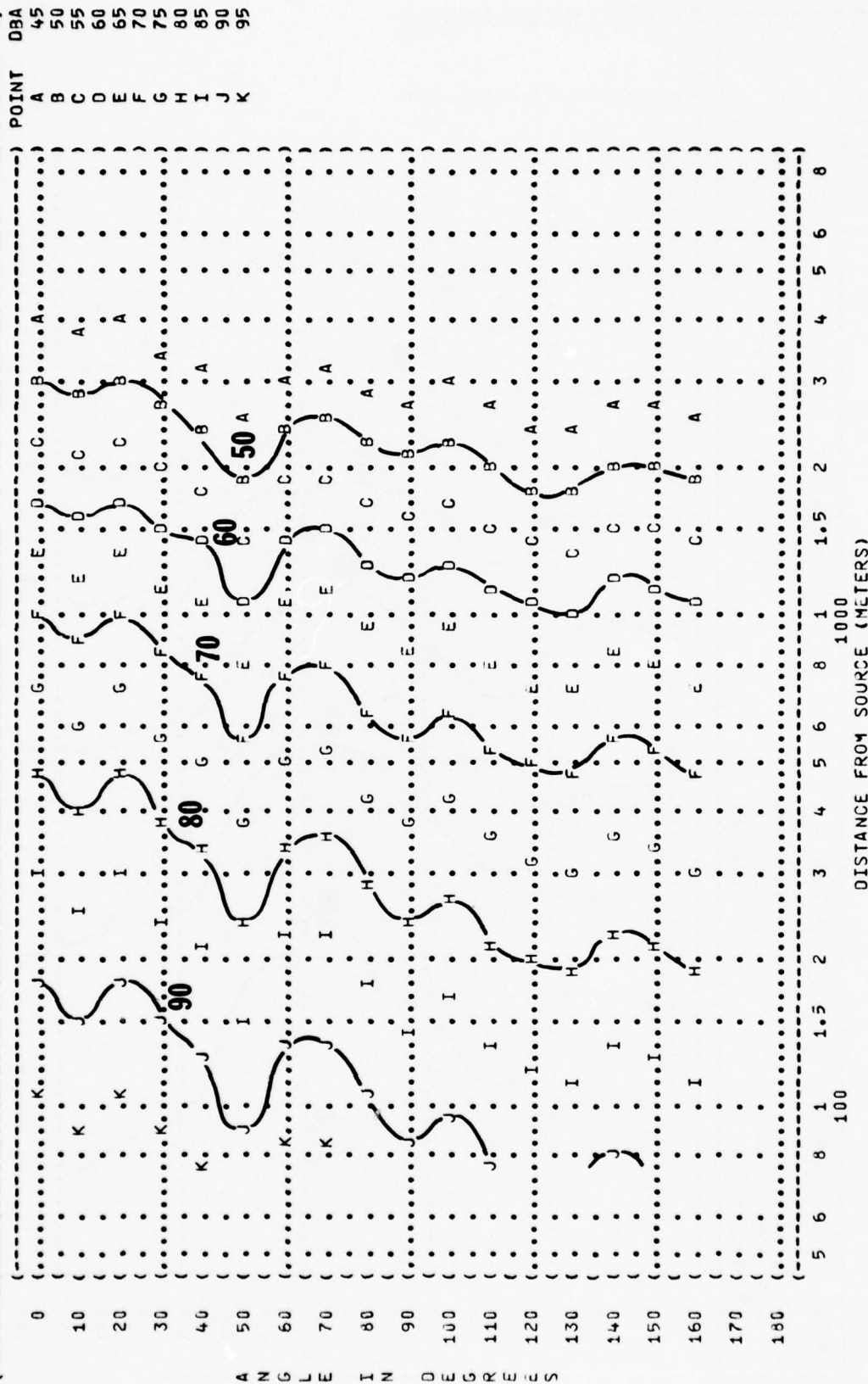
NOISE SOURCE/SUBJECT: C-119L AIRCRAFT
R-3350-89B ENGINE
FAR FIELD NOISE

POINT	DBA
A	45
B	50
C	55
D	60
E	65
F	70
G	75

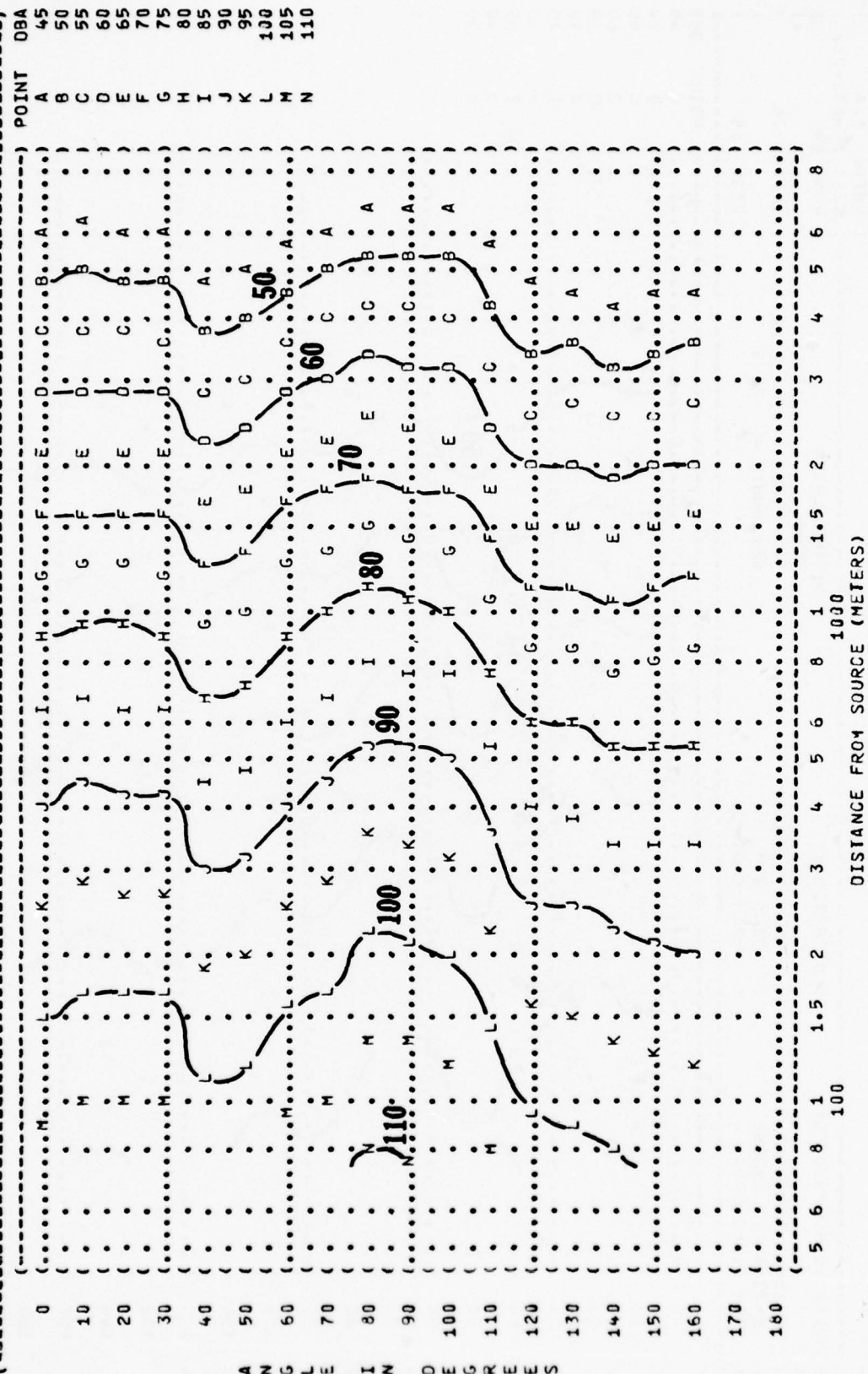


420 JW HZ 050645W

(FIGURE: A-WEIGHTED OVERALL SOUND LEVEL (OASLA)
 (7
 (EQUAL LEVEL CONTOURS (DBA)
 () IDENTIFICATION:
 ()
 () OMEGA 1.4
 () TEST 75-002-018
 () RUN 04
 ()
 (NOISE SOURCE/SUBJECT: (OPERATIONS:
 ()
 () C-119L AIRCRAFT (MAGNETO CHECK
 () R-3350-898 ENGINE (2100 RPM
 () FAR FIELD NOISE (BOTH ENGINES
 ()
 () METEOROLOGY:
 () TEMP = 15 C
 () BAR PRESS = .760 M HG
 () REL HUMID = 70 %
 ()
 () PAGE 15
 ()



(FIGURE: A-WEIGHTED OVERALL SOUND LEVEL (OASLA)
 (7
 (EQUAL LEVEL CONTOURS (DBA)
 () IDENTIFICATION:
 () OMEGA 1.4
 () TEST 75-002-018
 () RUN 05
 () NOISE SOURCE/SUBJECT: () OPERATION:
 () C-119L AIRCRAFT () MAXIMUM POWER
 () R-3350-898 ENGINE () 2900 RPM
 () FAR FIELD NOISE () BOTH ENGINES
 () METEOROLOGY:
 () TEMP = 15 C
 () BAR PRESS = .760 M HG
 () REL HUMID = 70 %
 () PAGE 15



(-----)
 (FIGURE: PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION, {PNLT}
 (EQUAL LEVEL CONTOURS (PNDB)
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 (-----)
 (NOISE SOURCE/SUBJECT: (OPERATION:
 (C-119L AIRCRAFT (IDLE POWER
 (R-3350-89B ENGINE (750 RPM
 (FAR FIELD NOISE (BOTH ENGINES
 (-----)
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (12 AUG 76
 (RUN 01
 (OMEGA 1.4
 (TEST 75-002-018
 (IDENTIFICATION:
 (PAGE 16
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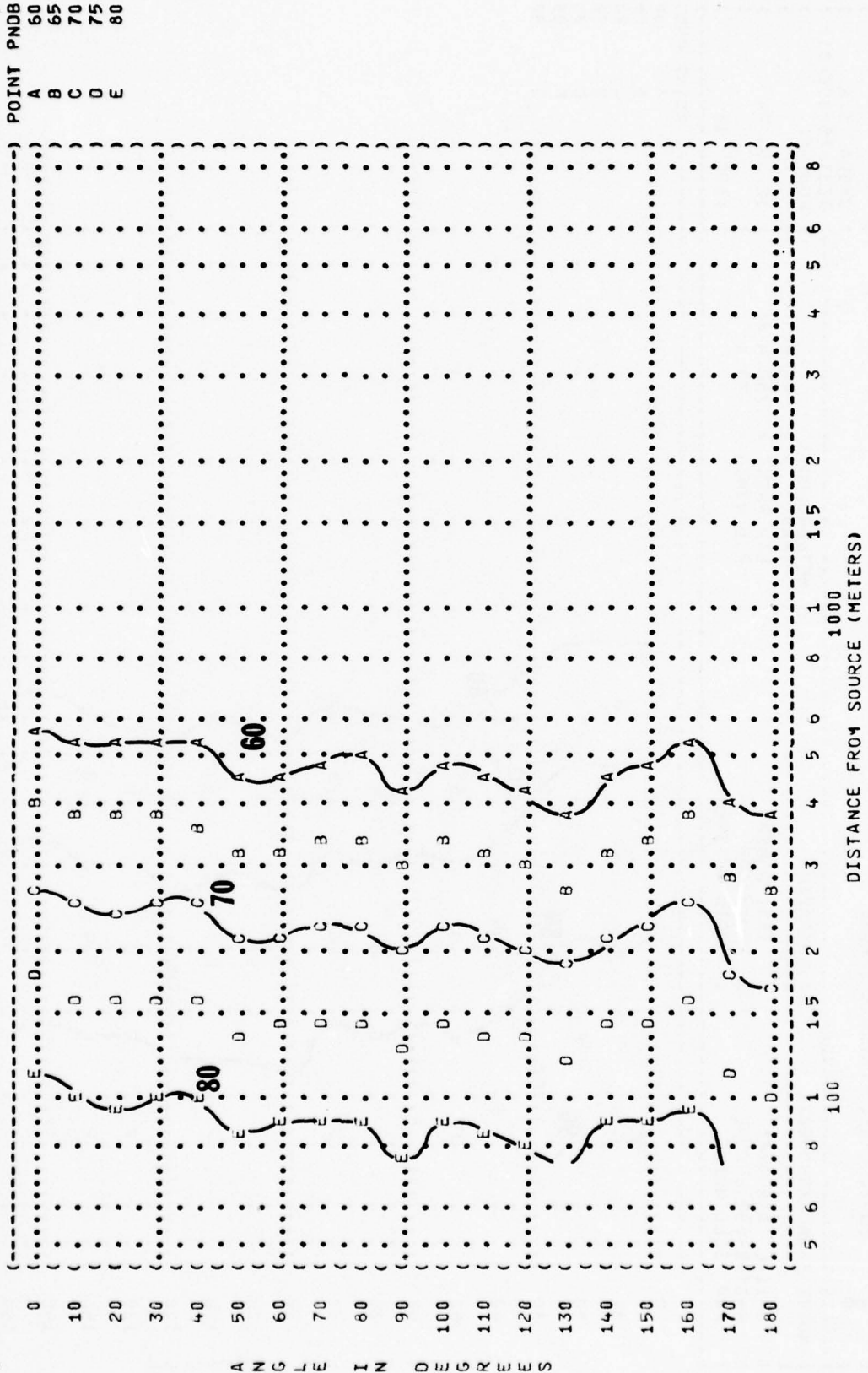


FIGURE: PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION {PNLT}
EQUAL LEVEL CONTOURS (PNDB)

EQUAL LEVEL CONTOURS (PNDB)

IDENTIFICATION:

OMEGA 1.4

TEST 75-002-018

RUN 02

15 C

60 M HG

PAGE 16

METEOROLOGY:

TEMP

BAR F

REL 1

(OPERATION:

1

TAXI POWER

1000 RPM

NOISE SOURCE/SUBJECT:

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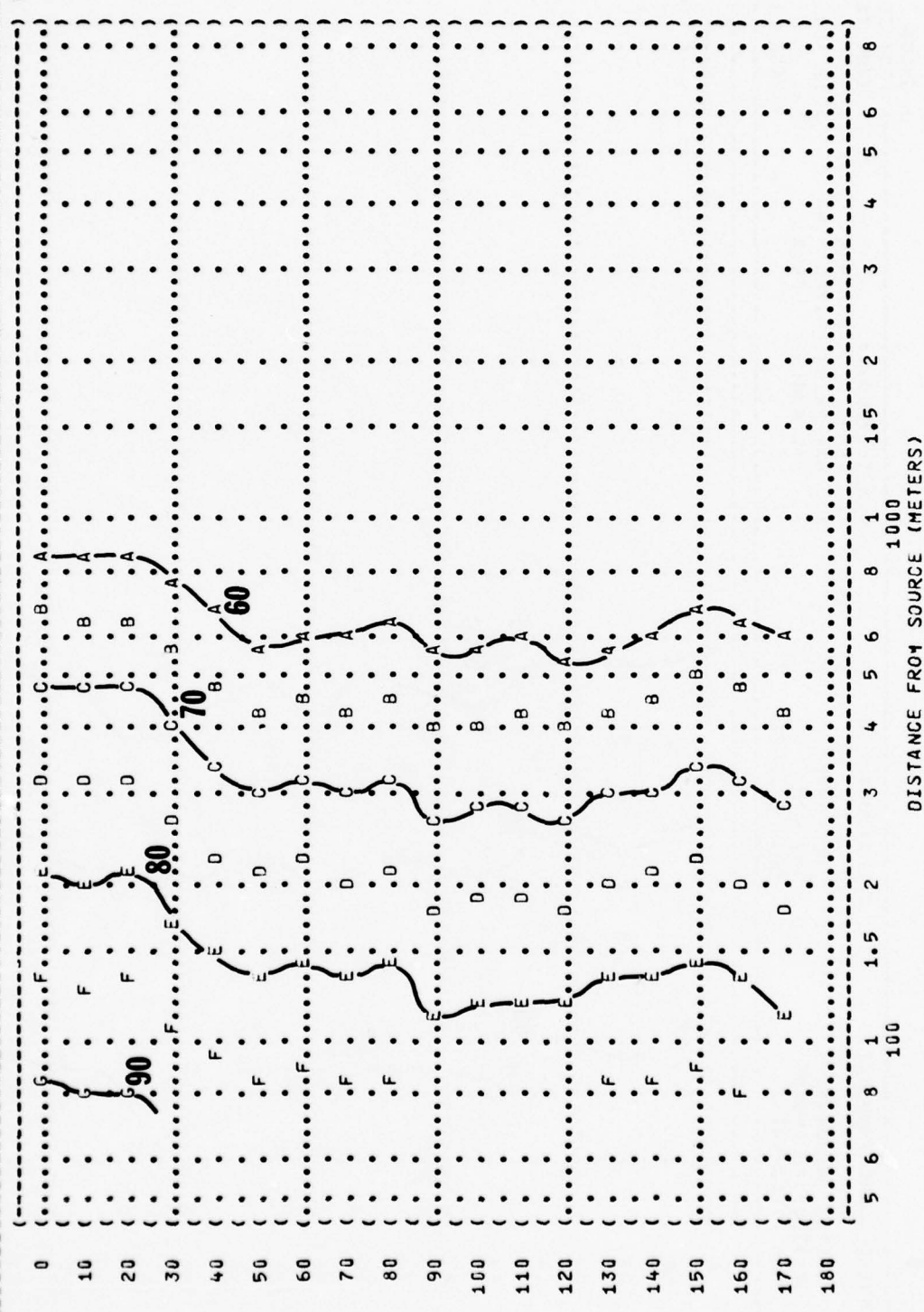
C-119L AIRCRAFT

R-3350-898 ENGINE

POINT	PINDB
A	60
B	65
C	70
D	75
E	80
F	85
G	90

	G	F	E	D	C	B	A
0							
10		F	E	D	C	B	A
20		F	E	D	C	B	A
30		F	E	D	C	B	A

ANGLER IN DEGREES



1000
DISTANCE FROM SOURCE (METERS)

1000

100

8

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(-----)
( ) FIGURE: PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION {PNLT}
( ) EQUAL LEVEL CONTOURS (PND8)
( )
( )      8
( )
( ) NOISE SOURCE/SUBJECT: ( OPERATION: ) METEOROLOGY:
( ) C-119L AIRCRAFT ( MAGNETO CHECK ) TEMP = 15 C
( ) R-3350-89B ENGINE ( 2100 RPM ) BAR PRESS = .760 M HG
( ) FAR FIELD NOISE ( BOTH ENGINES ) REL HUMID = 70 %
( )
( ) IDENTIFICATION:
( ) OMEGA 1.4
( ) TEST 75-002-018
( ) RUN 04
( ) PAGE 16
```

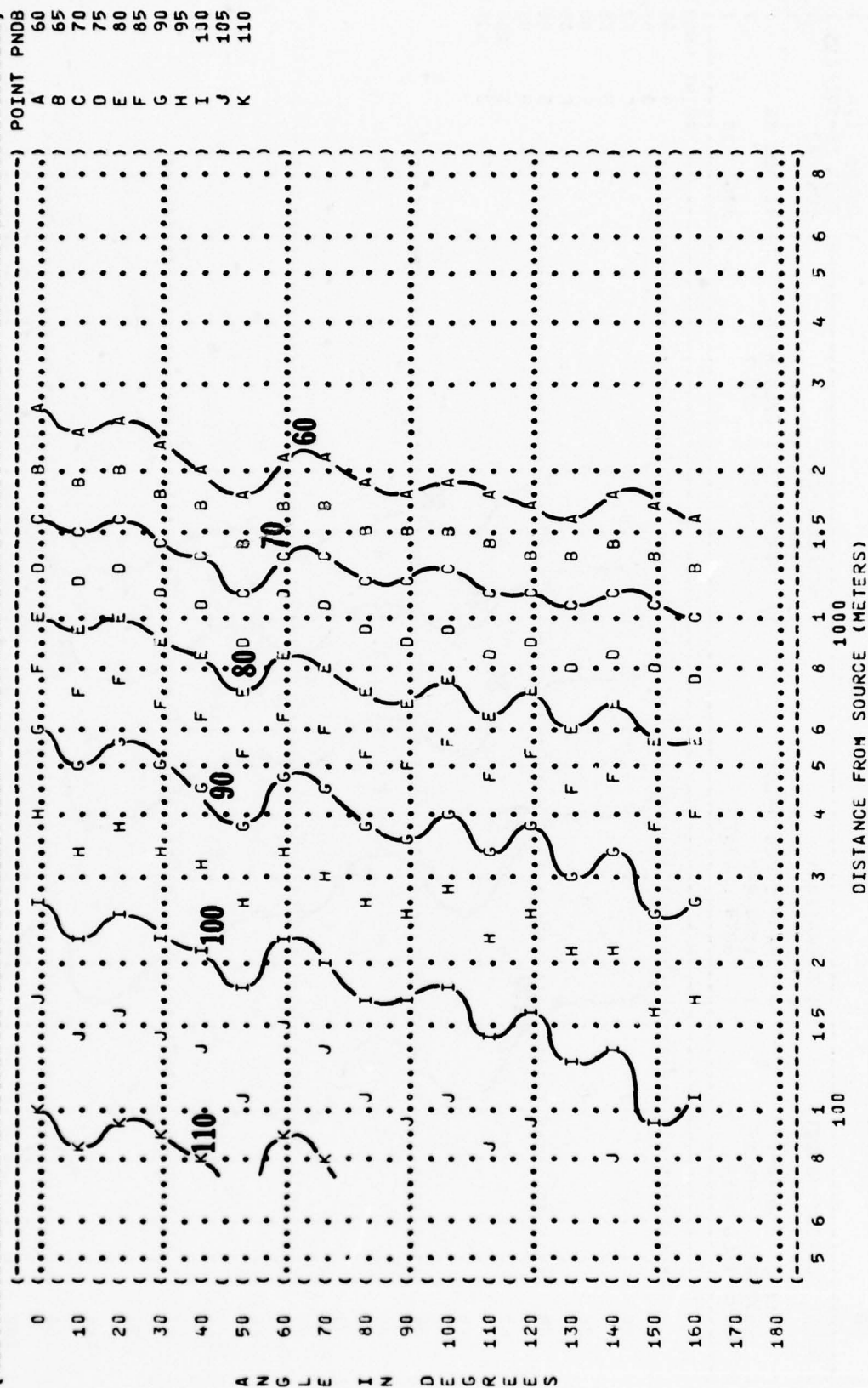
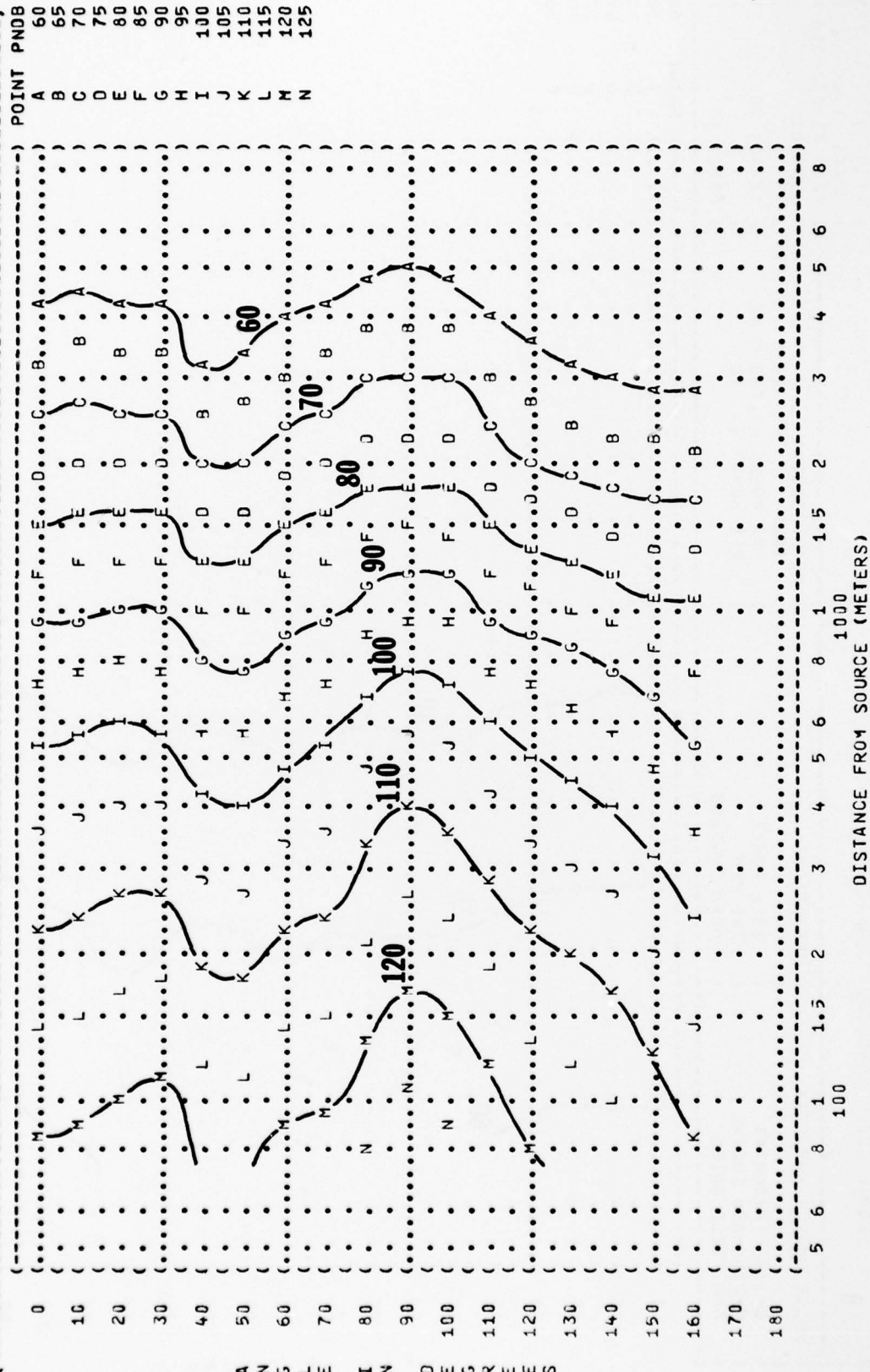


FIGURE: PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION (PNLT)
8
EQUAL LEVEL CONTOURS (PNDB)

NOISE SOURCE/SUBJECT: (OPERATION:) METEOROLOGY:) IDENTIFICATION:)
(((TEMP = 15 C))
(C-119L AIRCRAFT (MAXIMUM POWER) BAR PRESS = .760 M HG)
(R-3350-89B ENGINE (2900 RPM) REL HUMID = 70 %)
(FAR FIELD NOISE (BOTH ENGINES)) PAGE 16)



(FIGURE: PREFERRED SPEECH INTERFERENCE LEVEL (PSIL)
(EQUAL LEVEL CONTOURS (DB)

```

( 9
(-----)
( NOISE SOURCE/SUBJECT: ( OPERATION: ) METEOROLOGY: )
(-----)
( OMEGA 1.4 )
(-----)
( TEST 75-00 )
(-----)
( RUN 03 )

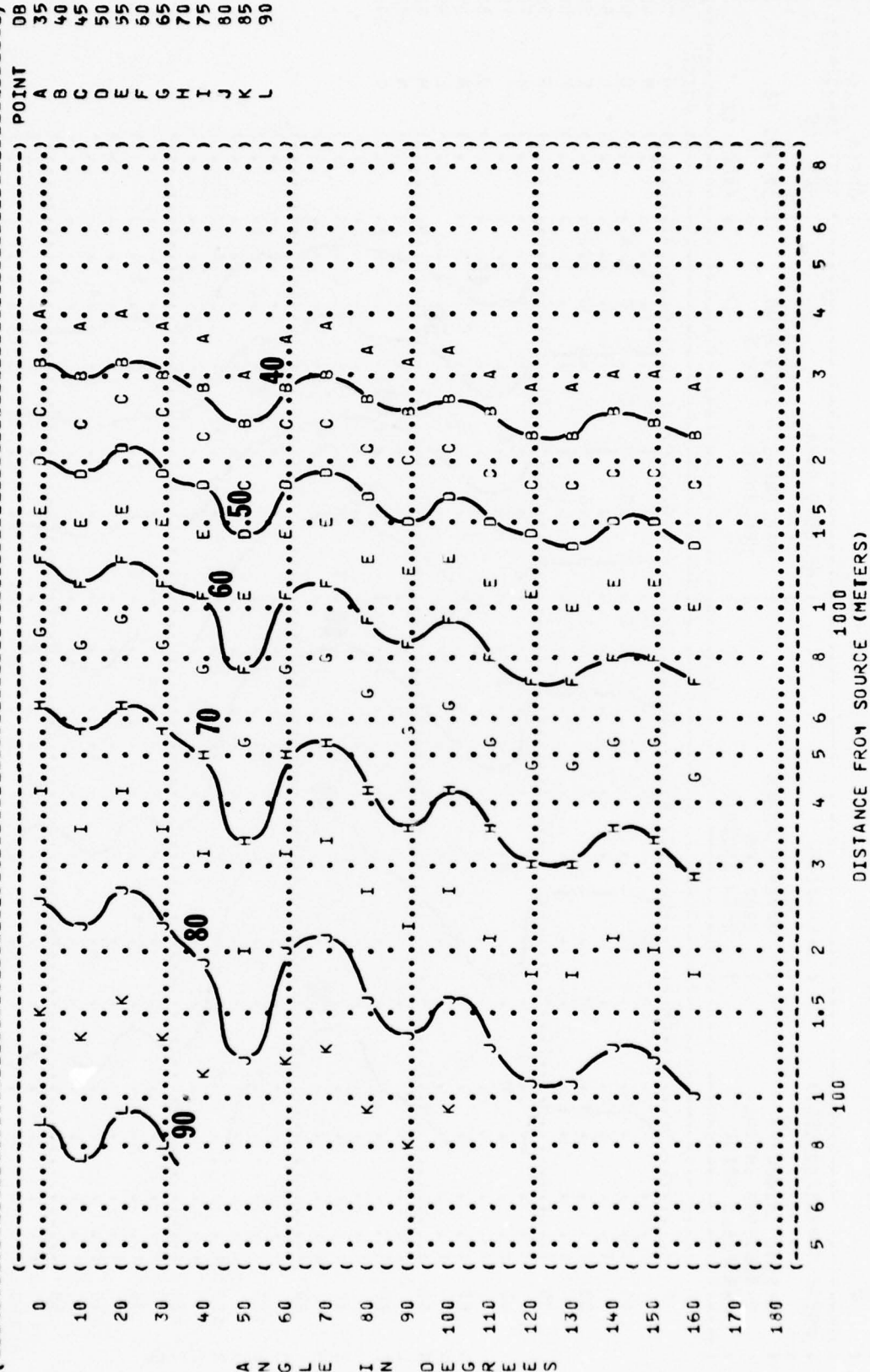
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()	TEMP = 15 C)		
(C-119L AIRCRAFT	(PROP SPEED CHECK)	BAR PRESS = .760 M HG) 12 AUG 76
(R-3350-89B ENGINE	(1800 RPM)	REL HUMID = 70 %)

(FAR FIELD NOISE (BOTH ENGINES)) PAGE 17



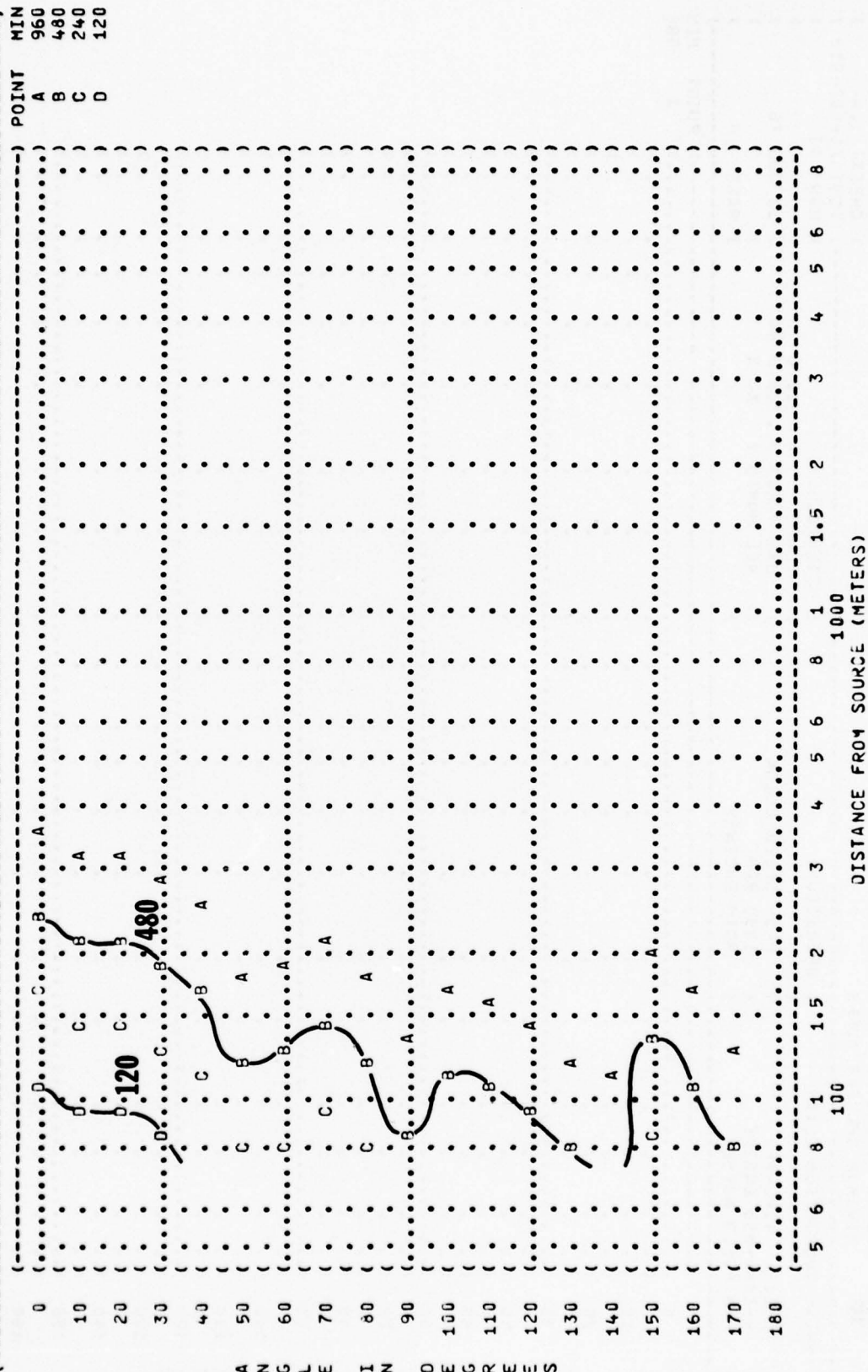
() FIGURE: PREFERRED SPEECH INTERFERENCE LEVEL (PSIL)
 () 9
 () IDENTIFICATION:
 ()
 () OMEGA 1.4
 () TEST 75-002-018
 () RUN 04
 () NOISE SOURCE/SUBJECT: () OPERATION:
 () C-119L AIRCRAFT () MAGNETO CHECK
 () R-335u-89B ENGINE () 2100 RPM
 () FAR FIELD NOISE () BOTH ENGINES
 () METEOROLOGY:
 () TEMP = 15 C
 () BAR PRESS = .760 M HG
 () REL HUMID = 70 %
 () 12 AUG 76
 () PAGE 17




```
(-----)
( FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) ) IDENTIFICATION: )
(      EQUAL TIME CONTOURS (MINUTES) ) )
(          10 ) OMEGA 1.4 )
(-----)
( NOISE SOURCE/SUBJECT: ) METEOROLOGY: ) TEST 75-002-018 )
(      C-119L AIRCRAFT ) TEMP = 15 C ) RUN 02 )
( R-3350-89B ENGINE ) BAR PRESS = .760 M HG ) )
( FAK FIELD NOISE ) REL HUMID = 70 % )
(      BOTH ENGINES ) ) PAGE 7 )
(-----)
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[illegible]

((FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)) IDENTIFICATION:)
 ((10 EQUAL TIME CONTOURS (MINUTES)))
 ((NO PROTECTION))
 ((NOISE SOURCE/SUBJECT:) OPERATION:) METEOROLOGY:)
 ((C-119L AIRCRAFT)) TEMP = 15 C)
 ((R-3350-898 ENGINE)) PROP SPEED CHECK)
 ((FAR FIELD NOISE)) 1800 RPM)
 (()) BAR PRESS = .760 M HG)
 (()) REL HUMID = 70 %)
 (()) 12 AUG 76)
 (()) RUN 03)
 (()) PAGE 7)



426 JIU HZ 050645WS

60

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(-----)
( FIGURE: MAXIMUM PERMISSIBLE TIME {T} FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) ) IDENTIFICATION:
( EQUAL TIME CONTOURS (MINUTES) )
(      10      )
(-----)
( NOISE SOURCE/SUBJECT: ) OPERATION: ) METEOROLOGY:
( C-119L AIRCRAFT ) ( PROP SPEED CHECK ) TEMP = 15 C )
( R-3350-89B ENGINE ) ( 1800 RPM ) BAR PRESS = .760 M HG )
( FAR FIELD NOISE ) ( BOTH ENGINES ) REL HUMID = 70 % )
(-----)
( OMEGA 1.4 )
( TEST 75-002-018 )
( RUN 03 )
( PAGE 9 )
(-----)
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PERSONNEL MAY BE EXPOSED UP TO 360 MINUTES PER DAY
AT ALL DISTANCES FROM SOURCE EQUAL TO OR GREATER THAN 75 METERS
FOR ALL ANGLES EVALUATED (INDICATED BY < AT LEFT)
UNDER THE FOLLOWING EAR PROTECTION CONDITIONS:

AMERICAN OPTICAL 17J0 EAR MUFFS
V-51R EAR PLUGS
COMFIT TRIPLE FLANGE EAR PUGS
H-133 GROUND COMMUNICATION UNIT

DISTANCE FROM SOURCE (METERS)	
100	1000
5	8
6	1
1.5	2
3	3
4	4
5	5
6	6
1.5	8
2	1
3	1.5
4	2
5	3
6	4
8	5

1000
DISTANCE FROM SOURCE (METERS)

FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)

IDENTIFICATION:

OMEGA 1.4

TEST 75-002-018

RUN 04

12 AUG 76

PAGE 9

NOISE SOURCE/SUBJECT:

OPERATION:

METEOROLOGY:

TEMP = 15 C

BAR PRESS = .760 M HG

REL HUMID = 70 %

C-119L AIRCRAFT

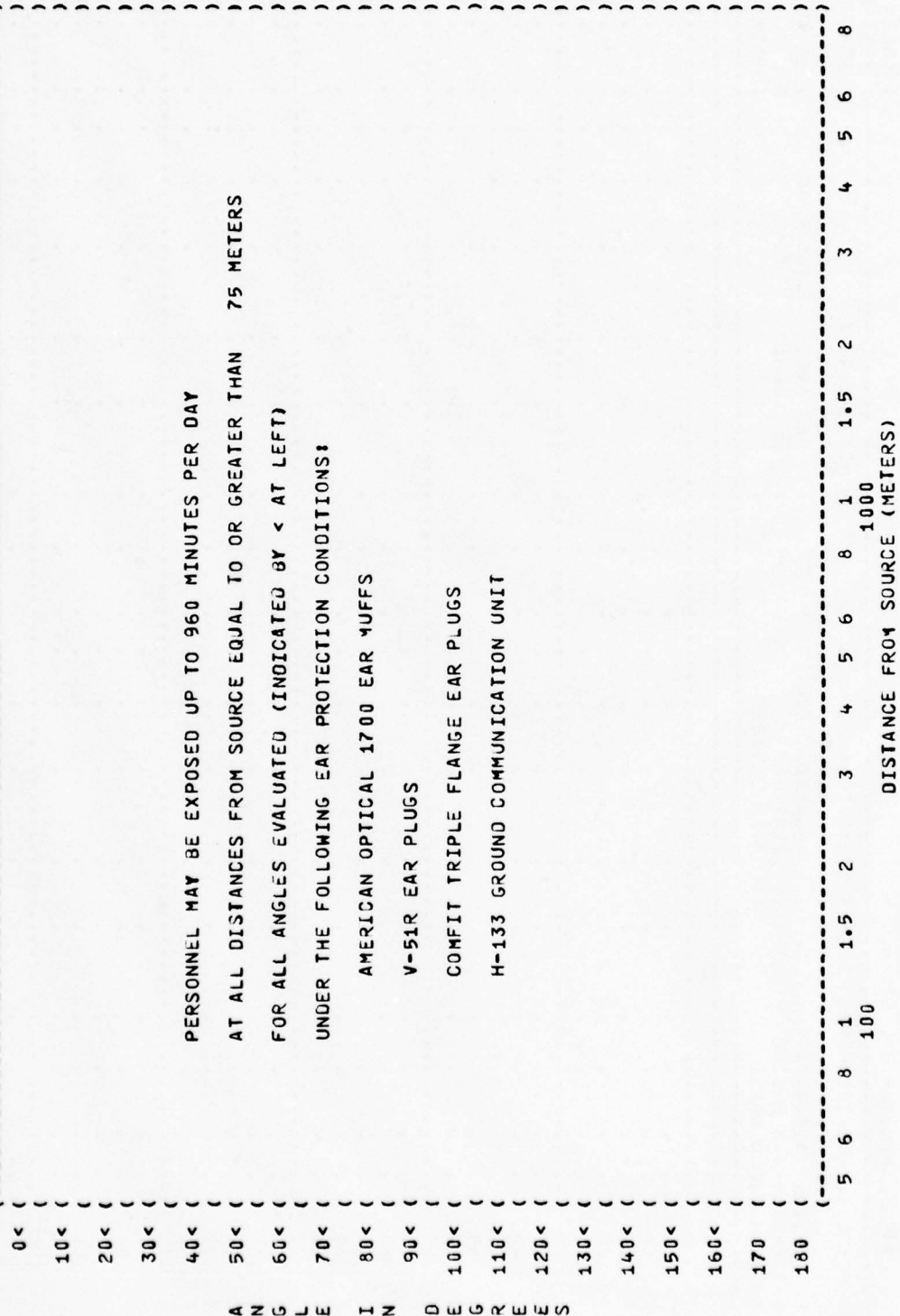
MAGNETO CHECK

R-3350-89B ENGINE

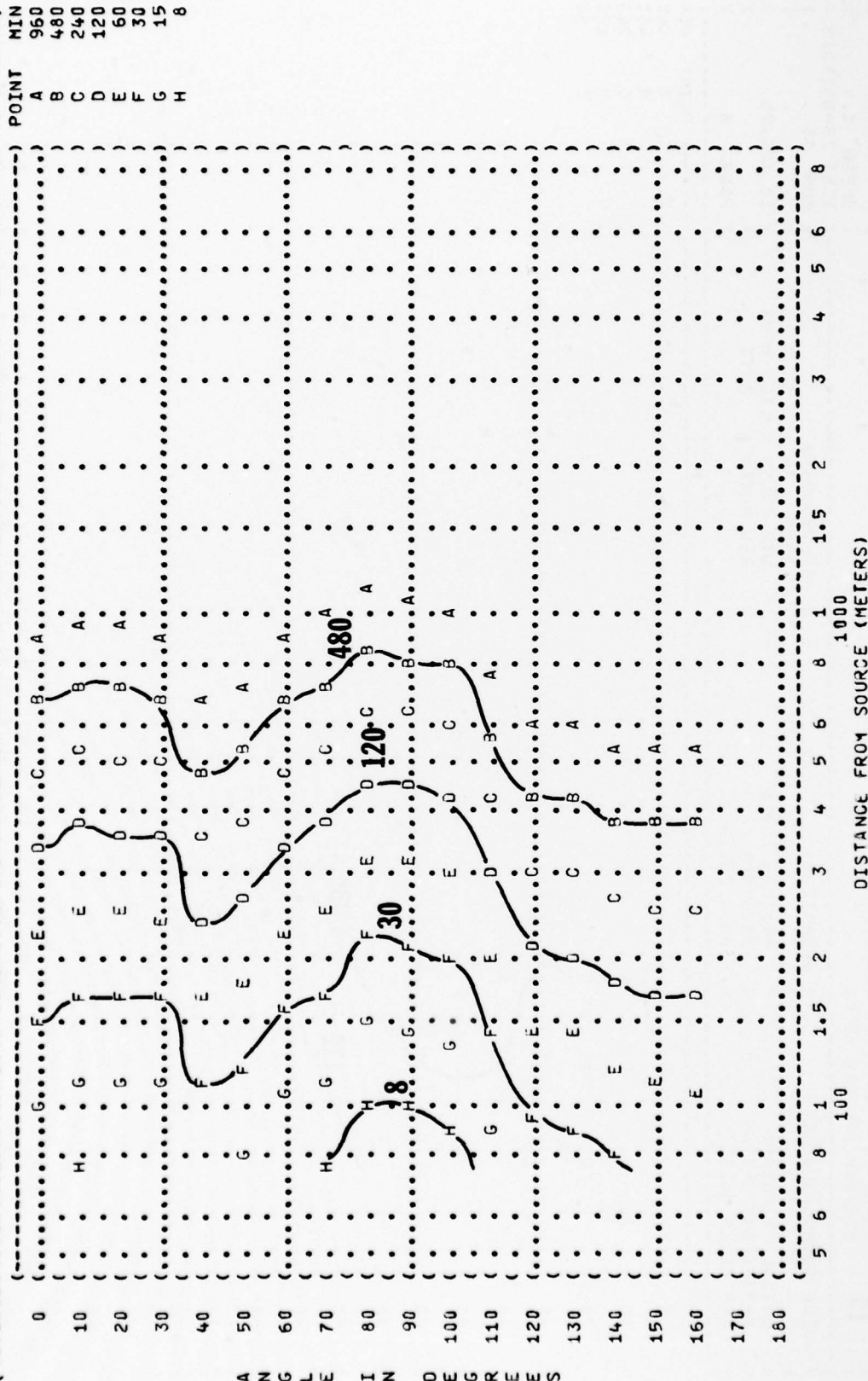
2100 RPM

FAR FIELD NOISE

BOTH ENGINES



(	(	FIGURE:	MAXIMUM PERMISSIBLE TIME {T} FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)	)	) IDENTIFICATION:
(	(	EQUAL	TIME CONTOURS (MINUTES)))
(	(	NO PROTECTION		)	) OMEGA 1.4
(	(	10		)	) TEST 75-002-018
(	(	NOISE SOURCE/SUBJECT:	OPERATION:	) METEOROLOGY:	) RUN 05
(	(	C-119L AIRCRAFT	MAXIMUM POWER	) TEMP = 15 C)
((R-3350-83B ENGINE	2900 RPM) BAR PRESS = .760 M HG) 12 AUG 76
((FAR FIELD NOISE	BOTH ENGINES) REL HUMID = 70 %)
(()) PAGE 7



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(-----)
( FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) ) IDENTIFICATION: )
( EQUAL TIME CONTOURS (MINUTES) ) )
( 10 MINIMUM QPL EAR MUFFS ) OMEGA 1.4 )
(-----)
( NOISE SOURCE/SUBJECT: ) OPERATION: ) METEOROLOGY: )
( C-119L AIRCRAFT ) ( MAXIMUM POWER = 15 C ) )
( R-3350-89B ENGINE ) ( 2900 RPM ) BAR PRESS = .760 M HG )
( FAR FIELD NOISE ) ( BOTH ENGINES ) REL HUMID = 70 % )
( PAGE 8 )
(-----)
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0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180

POINT

A B C D E

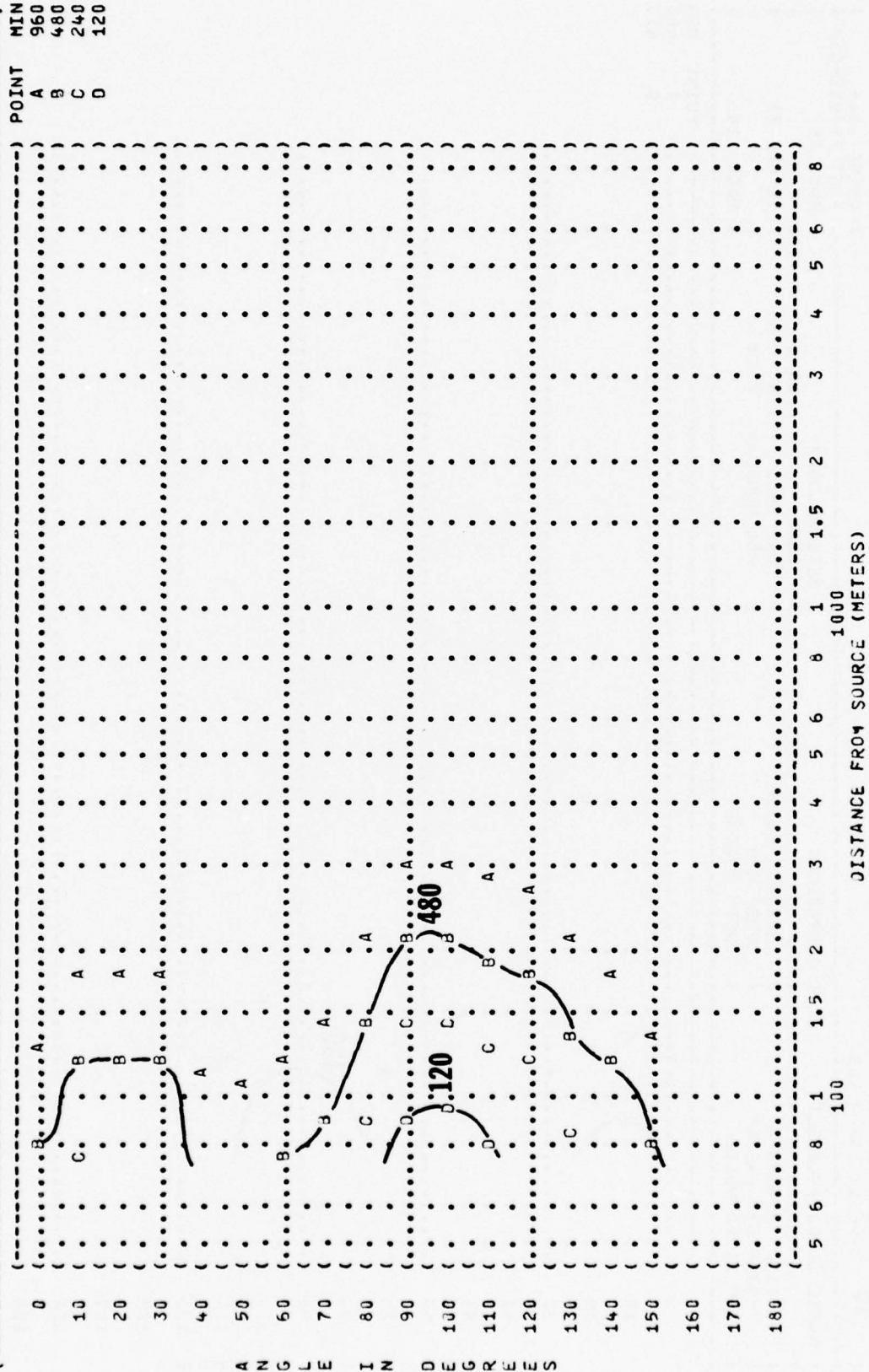
MIN 960 480 240 120 60

120 480 120 480 120

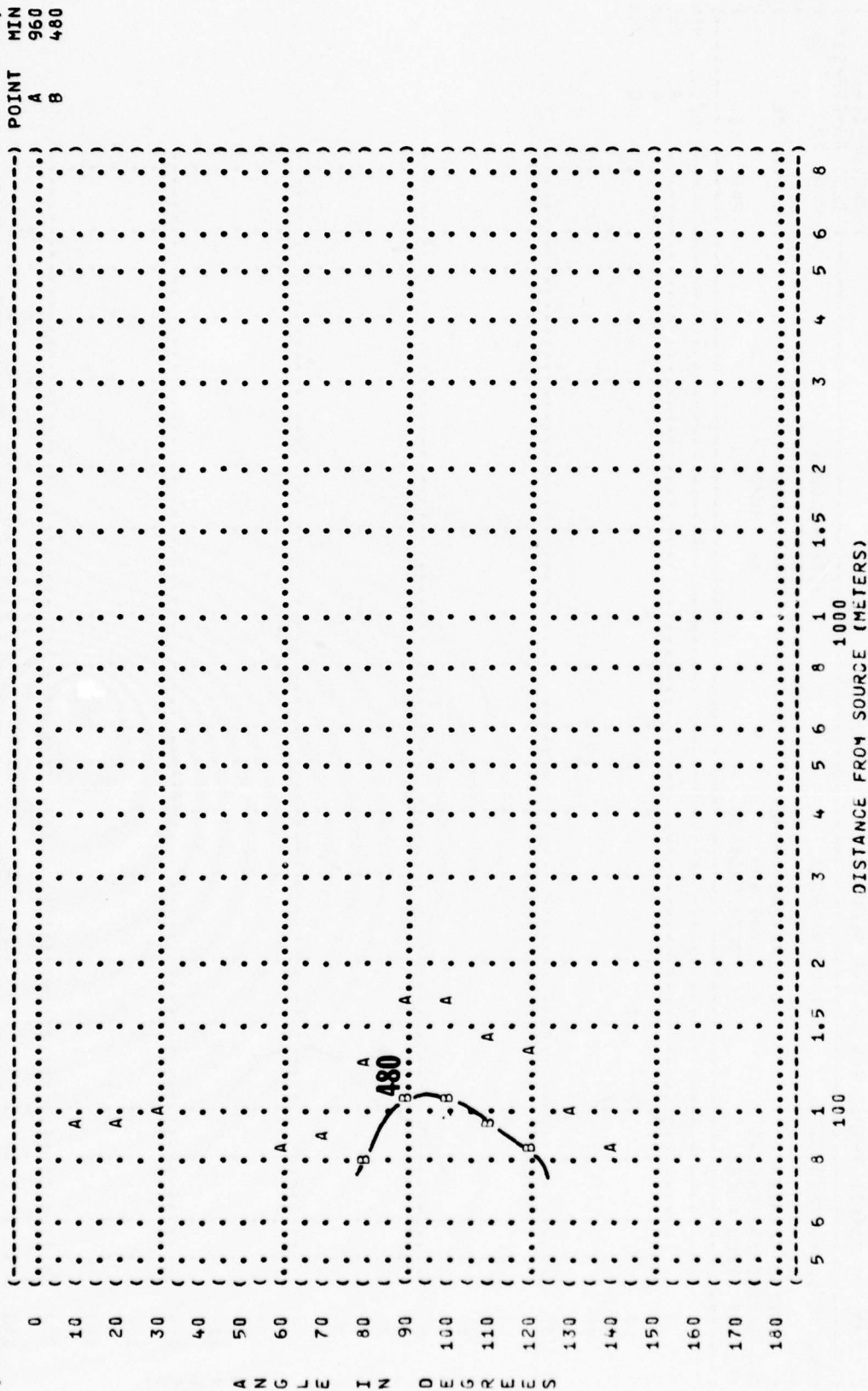
DISTANCE FROM SOURCE (METERS)

100 1000

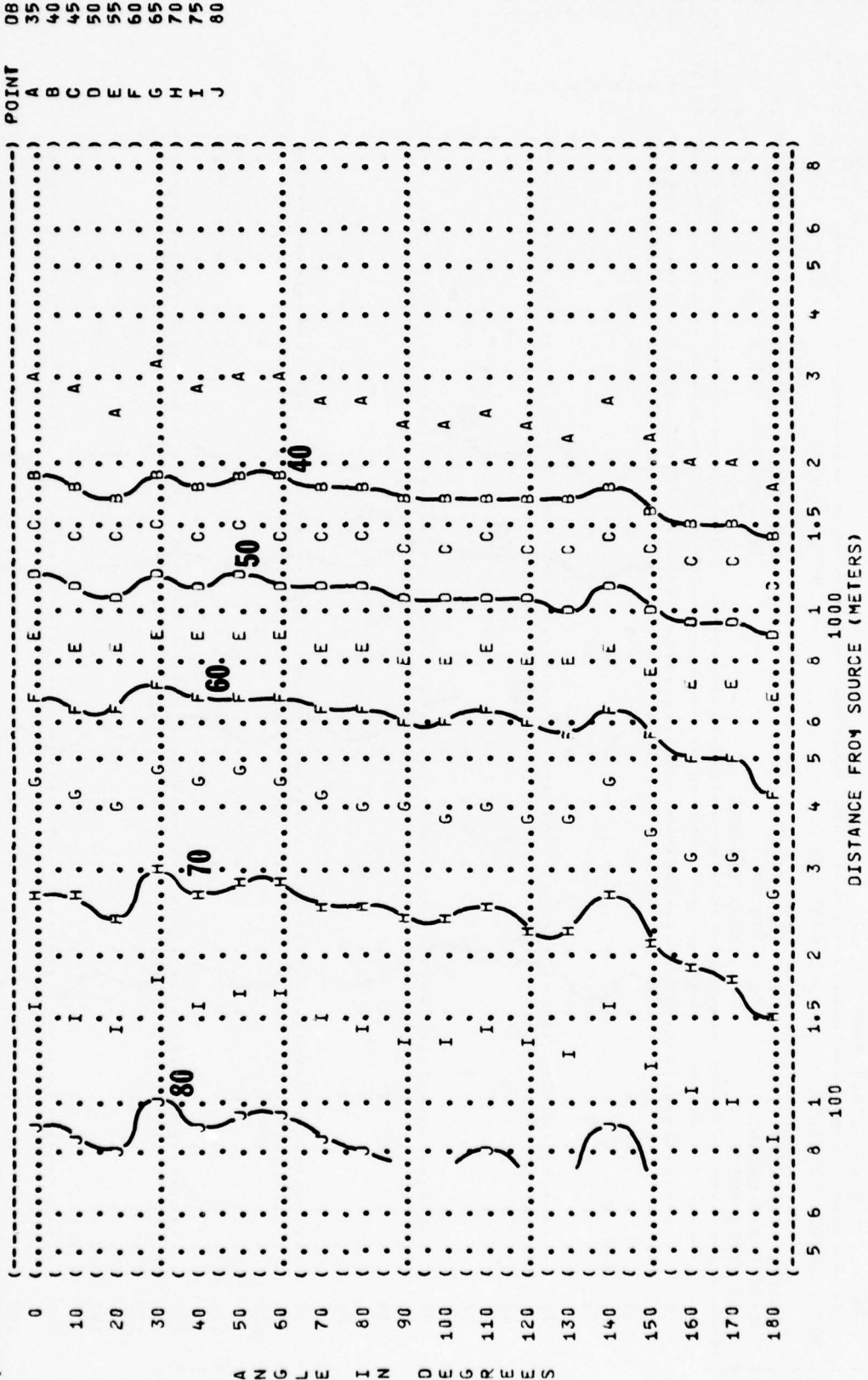
() FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)) IDENTIFICATION:)
 () EQUAL TIME CONTOURS (MINUTES))
 () AMERICAN OPTICAL 1700 EAR MUFFS) OMEGA 1.4
 () NOISE SOURCE/SUBJECT: () OPERATION:) TEST 75-002-018)
 () C-119L AIRCRAFT () MAXIMUM POWER) RUN 05)
 () R-3350-89B ENGINE () 2900 RPM) 12 AUG 76)
 () FAR FIELD NOISE () BOTH ENGINES) REL HUMID = 70 %)
 ())) TEMP = 15 C)
 ())) BAR PRESS = .760 M HG)
 ())) PAGE 9)



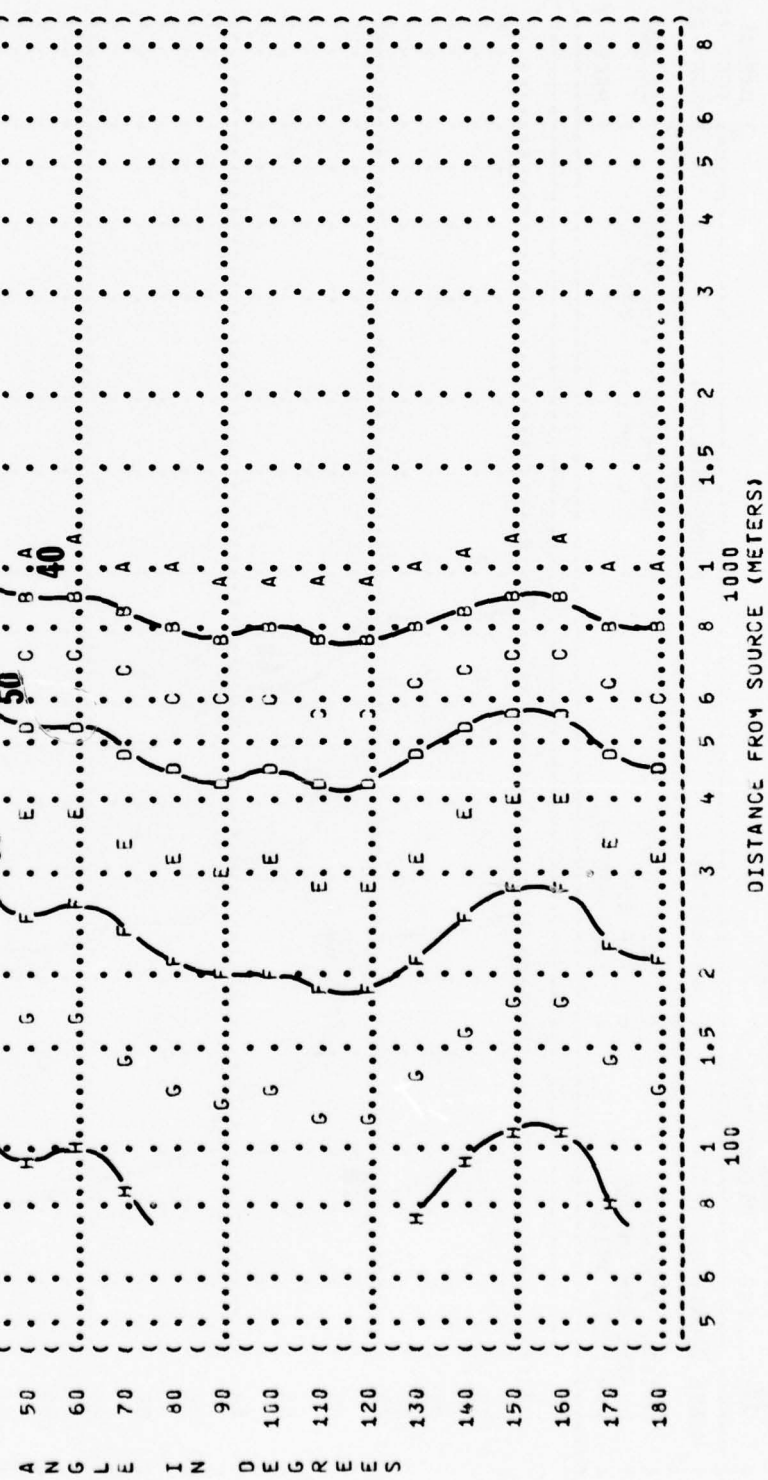
	MIN	POINT
0	960	A
10	480	B
	240	C



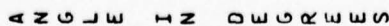
(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (11 63 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:
 (C-119L AIRCRAFT (IDLE POWER
 (R-3350-698 ENGINE (750 RPM
 (FAR FIELD NOISE (BOTH ENGINES
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 75-002-018
 (RUN 01
 (12 AUG 76
 (PAGE 19
 (POINT 08



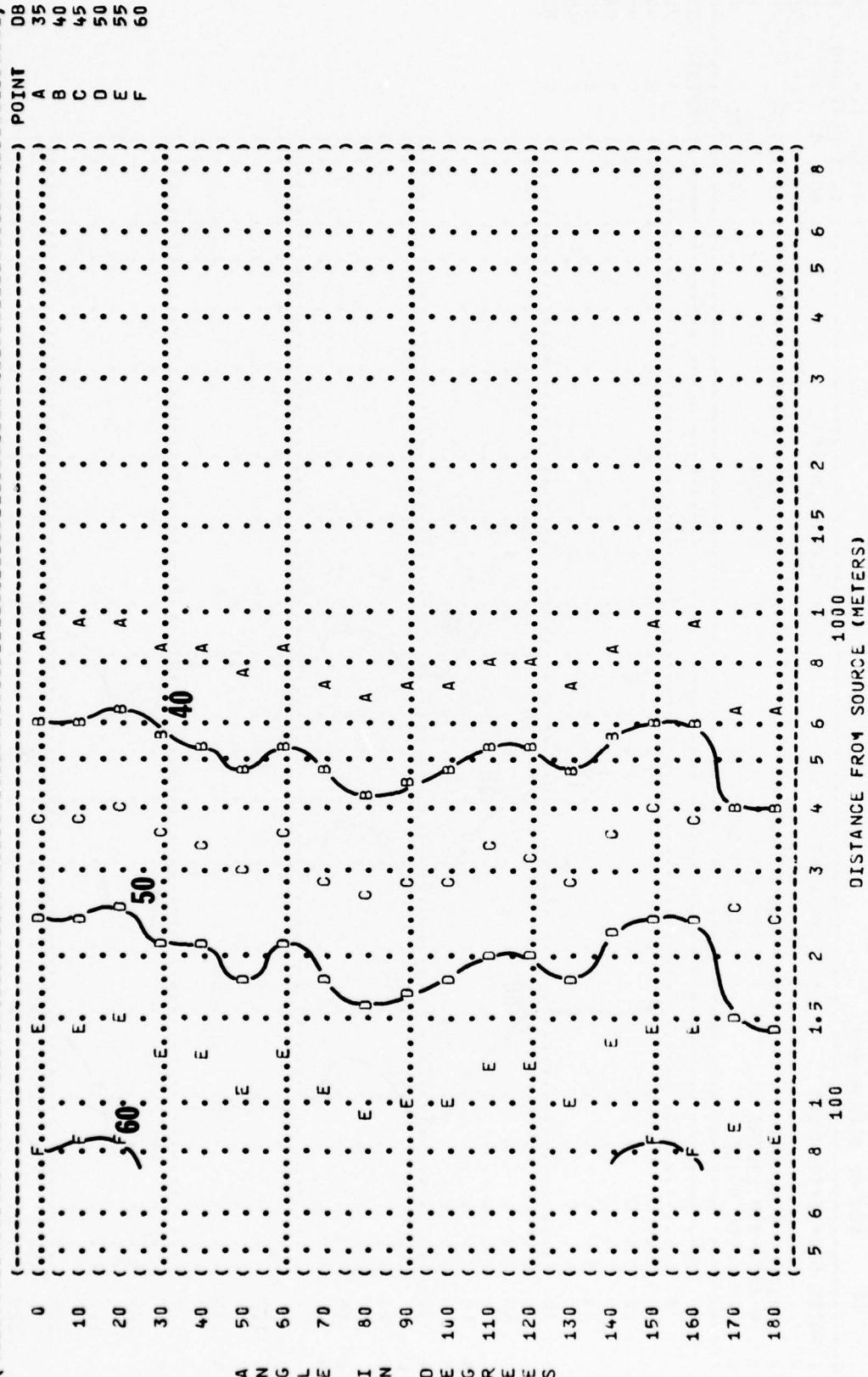
(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (11 EQUAL LEVEL CONTOURS (DB)
 (125 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:
 (C-119L AIRCRAFT (IDLE POWER
 (R-3350-89B ENGINE (750 RPM
 (FAR FIELD NOISE (BOTH ENGINES
 (METEOROLOGY: (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION: (OMEGA 1.4
 (TEST 75-002-018
 (RUN 01
 (12 AUG 76
 (PAGE 20
 (POINT DB
 (A 35
 (B 40
 (C 45
 (D 50
 (E 55
 (F 60
 (G 65
 (H 70
 (I 75



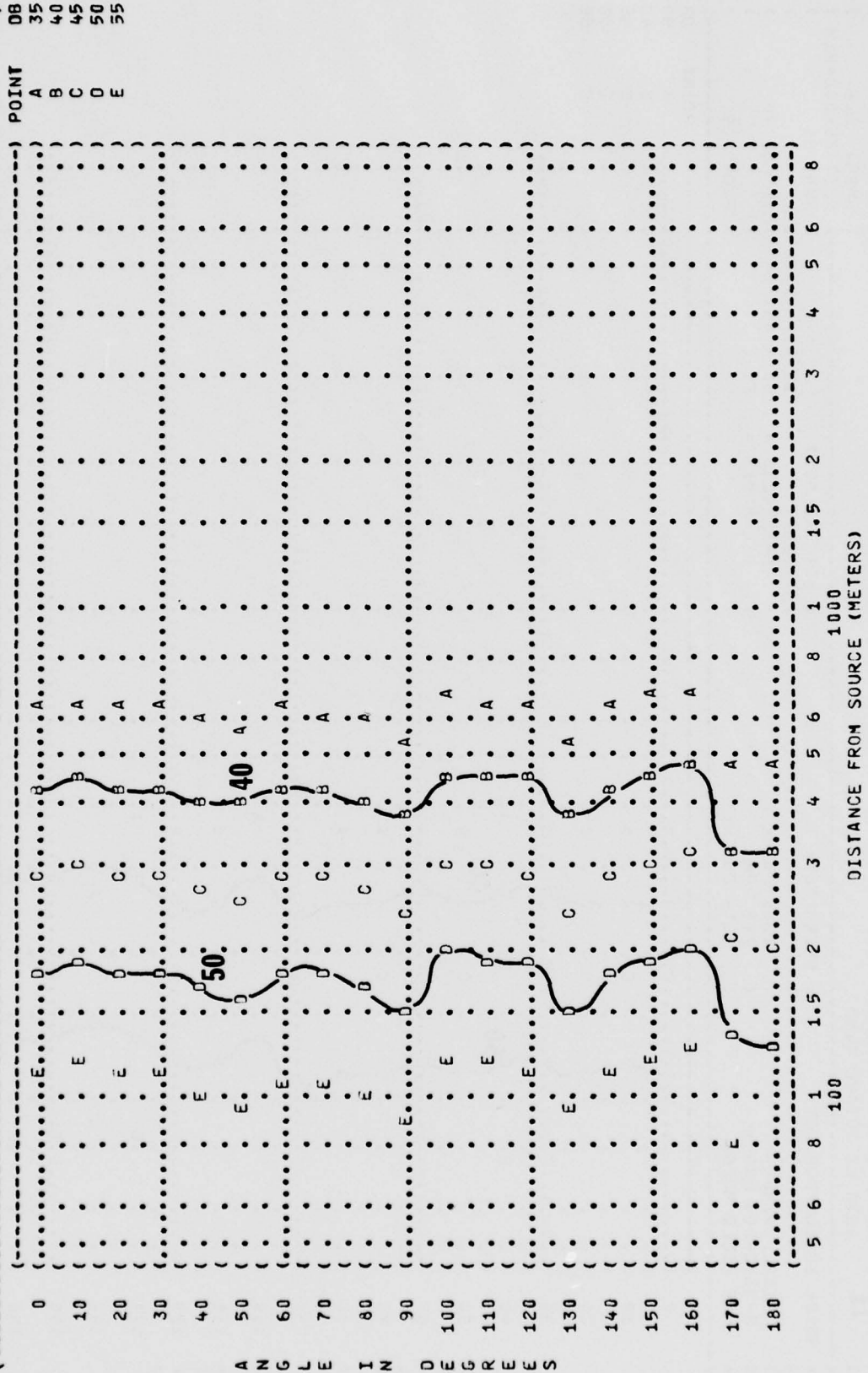
INT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65



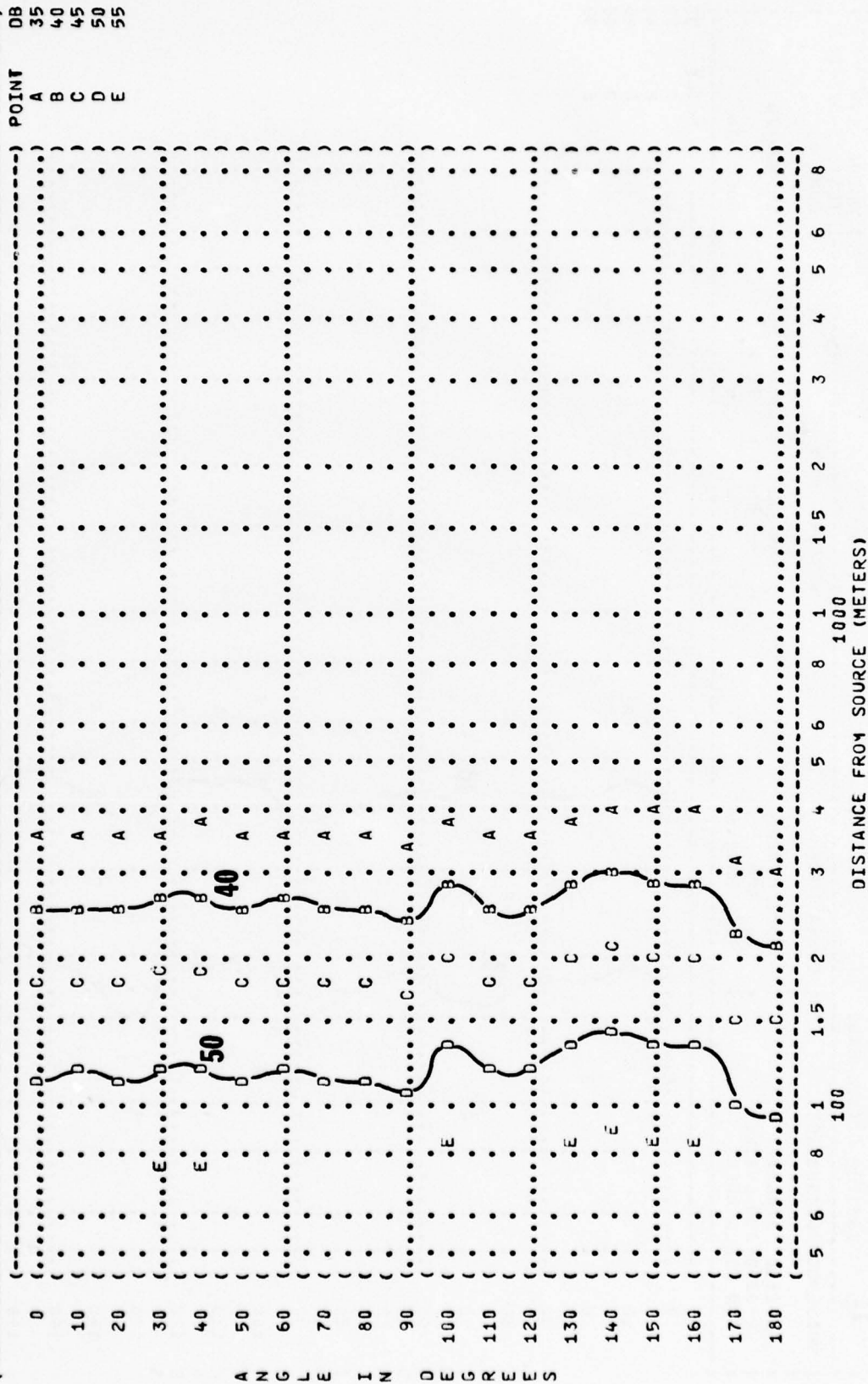
) IDENTIFICATION:
)
) OMEGA 1.4
) TEST 75-002-018
) RUN 01
)
) METEOROLOGY:
) TEMP = 15 C
) BAR PRESS = .760 M HG
) REL HUMID = 70 %
)
) OPERATION:
)
) IDLE POWER
) 750 RPM
) BOTH ENGINES
)
) NOISE SOURCE/SUBJECT:
)
) C-119L AIRCRAFT
) R-3350-89B ENGINE
) FAR FIELD NOISE



() FIGURE: SOUND PRESSURE LEVEL (SPL)
 () EQUAL LEVEL CONTOURS (DB)
 () 11 2000 HZ OCTAVE BAND
 () NOISE SOURCE/SUBJECT:
 () () OPERATION:
 () C-119L AIRCRAFT () IDLE POWER
 () R-3350-89B ENGINE () 750 RPM
 () FAR FIELD NOISE () BOTH ENGINES
 () METEOROLOGY:
 () TEMP = 15 C
 () BAR PRESS = .760 M HG
 () REL HUMID = 70 %
 () IDENTIFICATION:
 () OMEGA 1.4
 () TEST 75-002-018
 () RUN 01
 () 12 AUG 76
 () PAGE 24



(FIGURE: SOUND PRESSURE LEVEL {SPL}
 (11 EQUAL LEVEL CONTOURS (DB)
 (4000 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT:
 ((OPERATION:
 (((IDLE POWER
 (((750 RPM
 (((BOTH ENGINES
 (C-119L AIRCRAFT
 (R-3350-898 ENGINE
 (FAR FIELD NOISE
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 75-002-018
 (RUN 01
 (12 AUG 76
 (PAGE 25
 (POINT DB
 (A 35
 (B 40
 (C 45
 (D 50
 (E 55



IDENTIFICATION:
OMEGA 1.4

1.4

METEOROLOGY:

(OPERATION:

(IDLE POWER

(750 RPM

(BOTH ENGINES

METEOROLOGY:

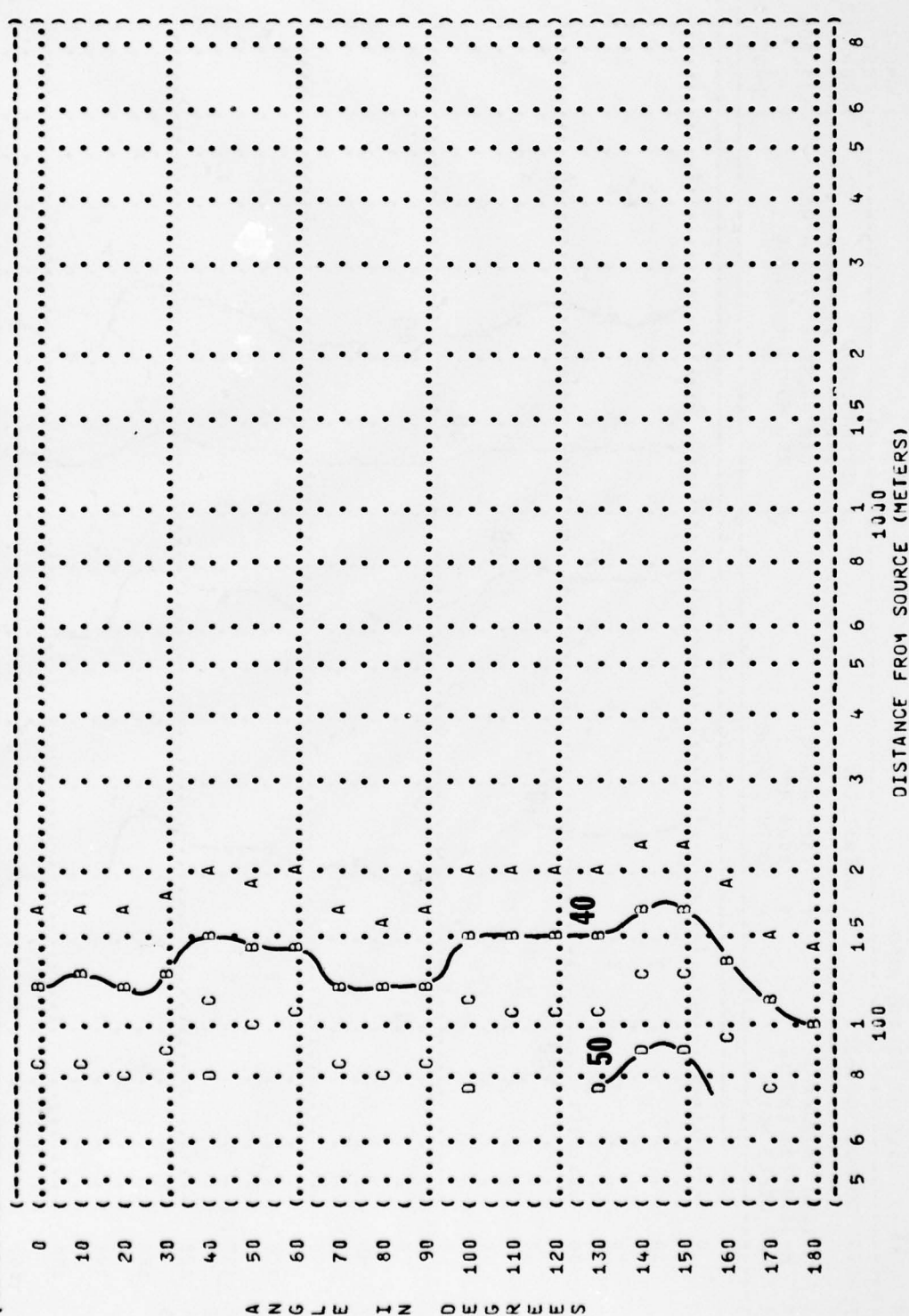
TEMP = 15 C

BAR PRESS = .760 H HG

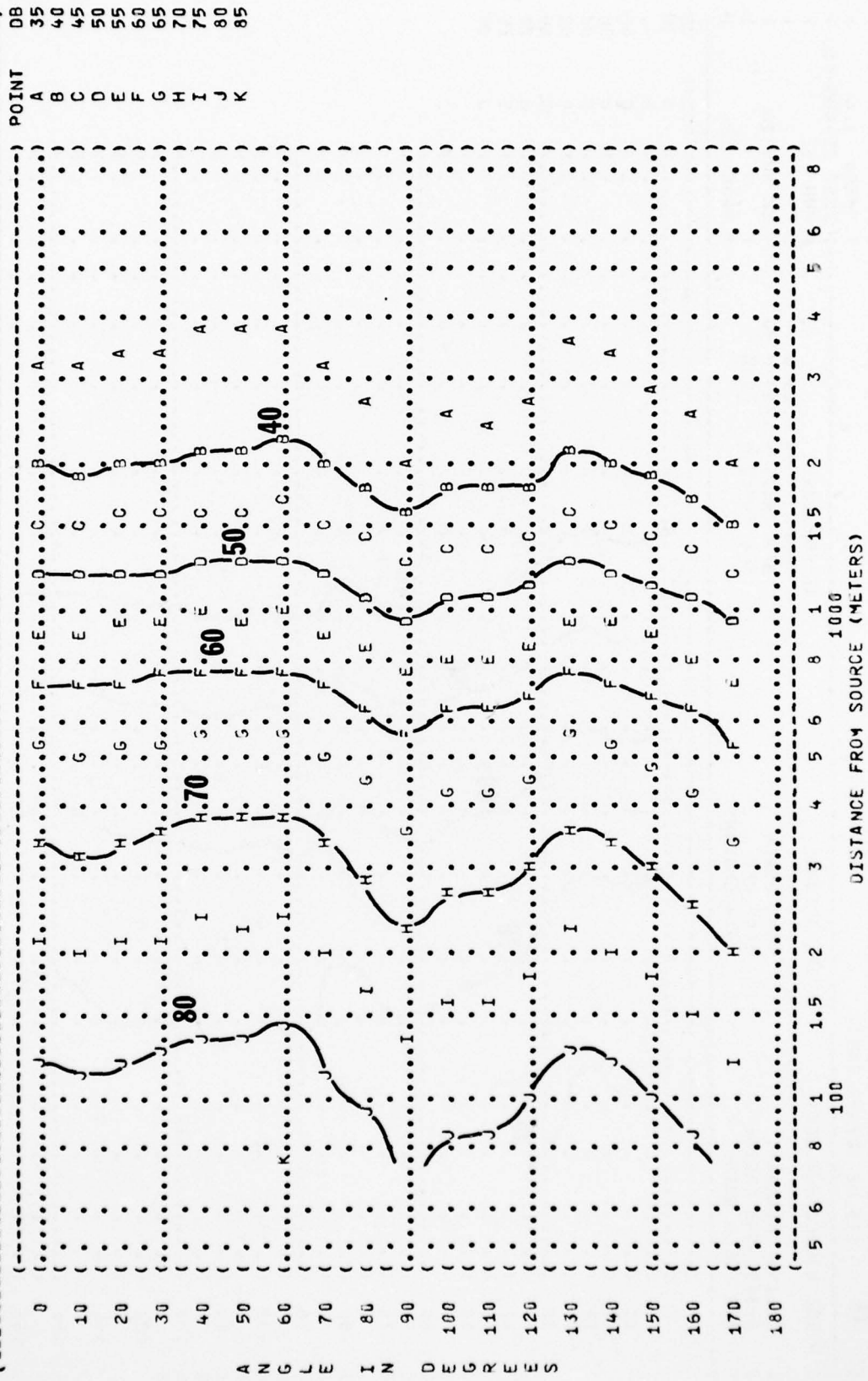
REL HUMID = 70 %

PAGE 26

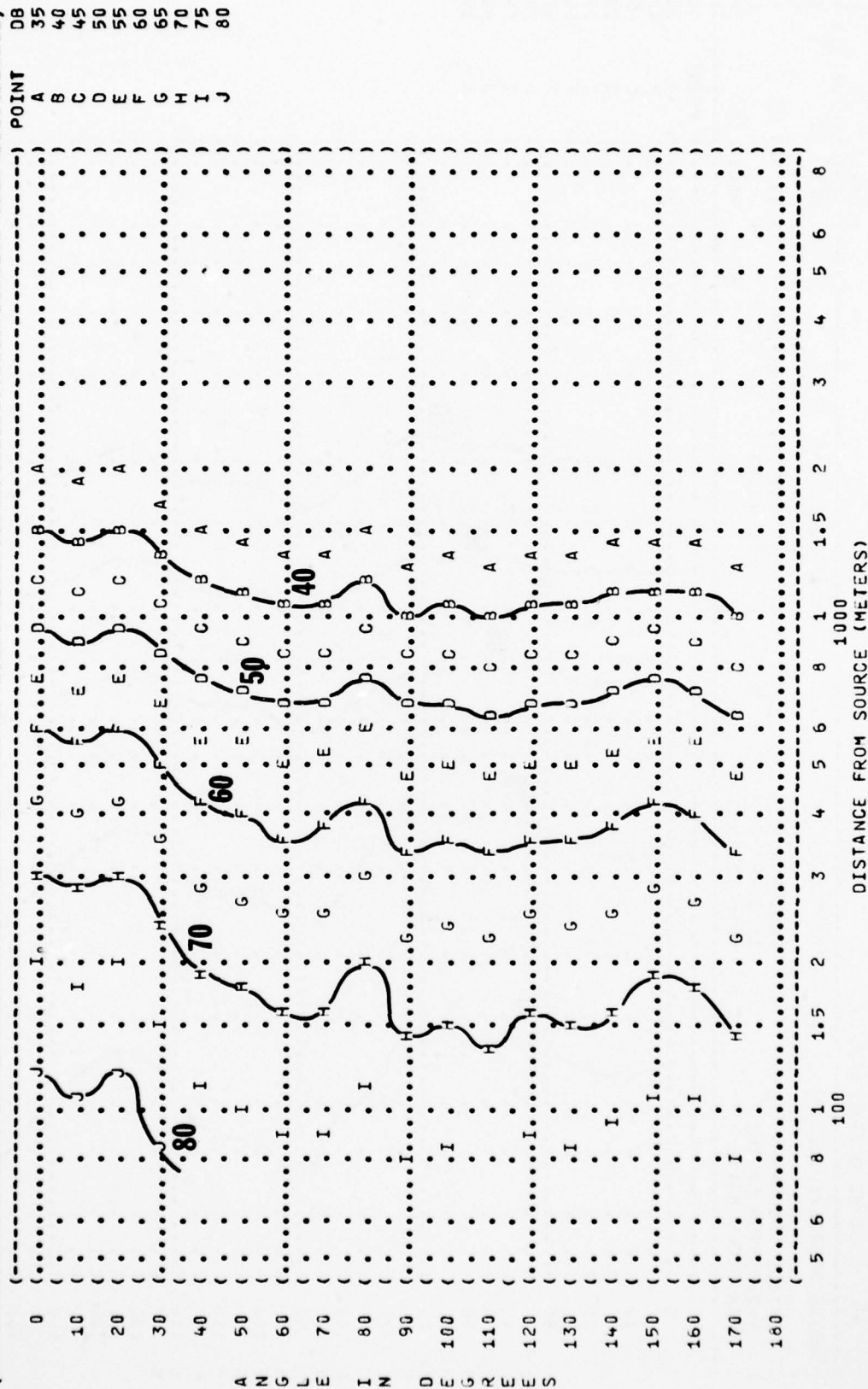
POINT	DB
A	35
B	40
C	45
D	50



((FIGURE: SOUND PRESSURE LEVEL (SPL)) IDENTIFICATION:)
 ((EQUAL LEVEL CONTOURS (DB)))
 ((63 HZ OCTAVE BAND))
 ((11))
 ((NOISE SOURCE/SUBJECT:))
 ((C-119L AIRCRAFT))
 ((R-3350-898 ENGINE))
 ((FAR FIELD NOISE))
 ((OPERATION:))
 ((TAXI POWER))
 ((1000 RPM))
 ((BOTH ENGINES))
 ((METEOROLOGY:))
 ((TEMP = 15 C))
 ((BAR PRESS = .760 M HG))
 ((REL HUMID = 70 %))
 ((12 AUG 76))
 ((RUN 02))
 ((PAGE 19))
 (())



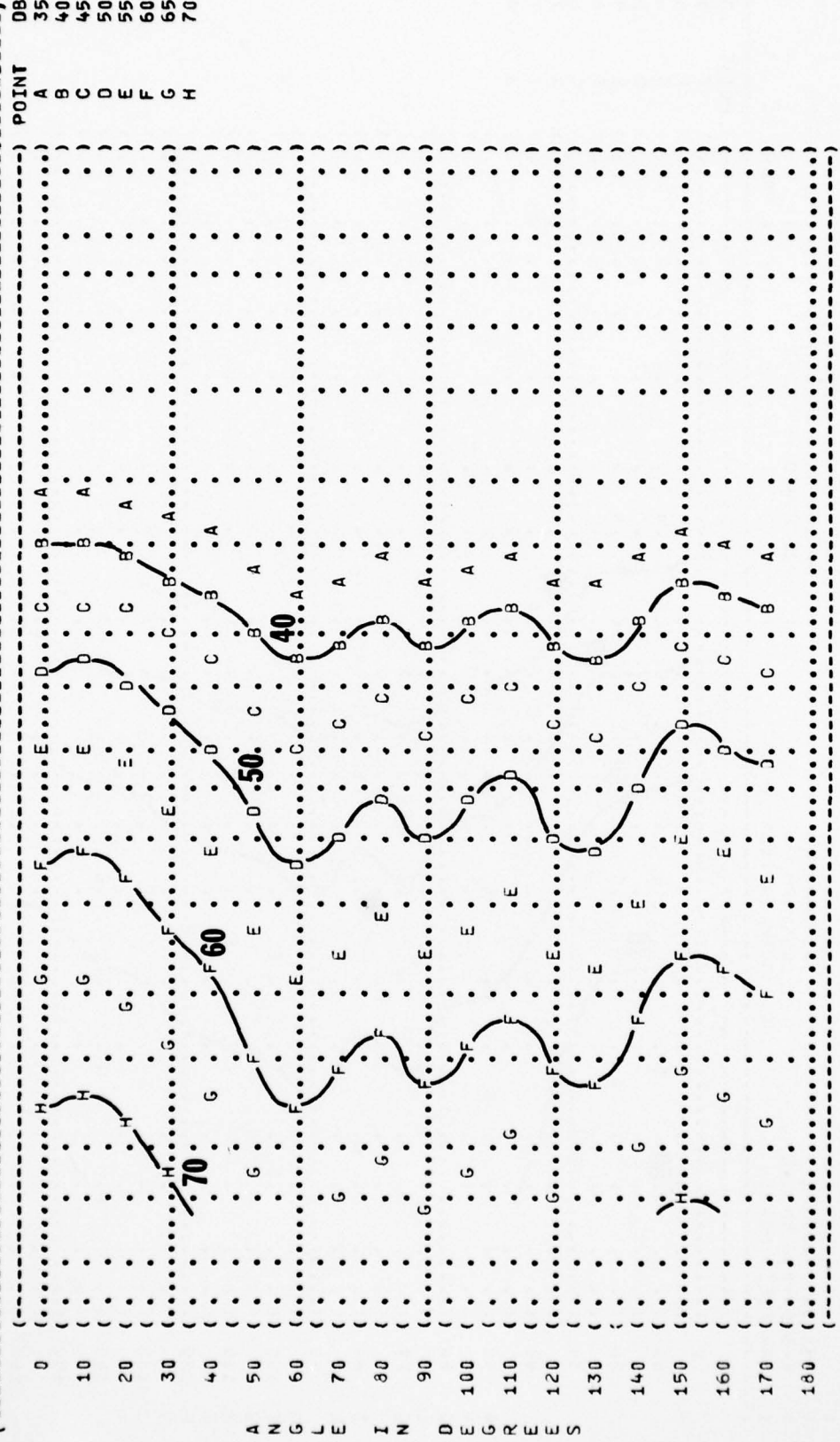
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 (11)
 (125 HZ OCTAVE BAND)
 (NOISE SOURCE/SUBJECT:)
 (C-119L AIRCRAFT)
 (R-3350-89B ENGINE)
 (FAR FIELD NOISE)
 (OPERATION:)
 (TAXI POWER)
 (1000 RPM)
 (BOTH ENGINES)
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 75-002-018)
 (RUN 02)
 (12 AUG 76)
 (PAGE 20)



1000

100

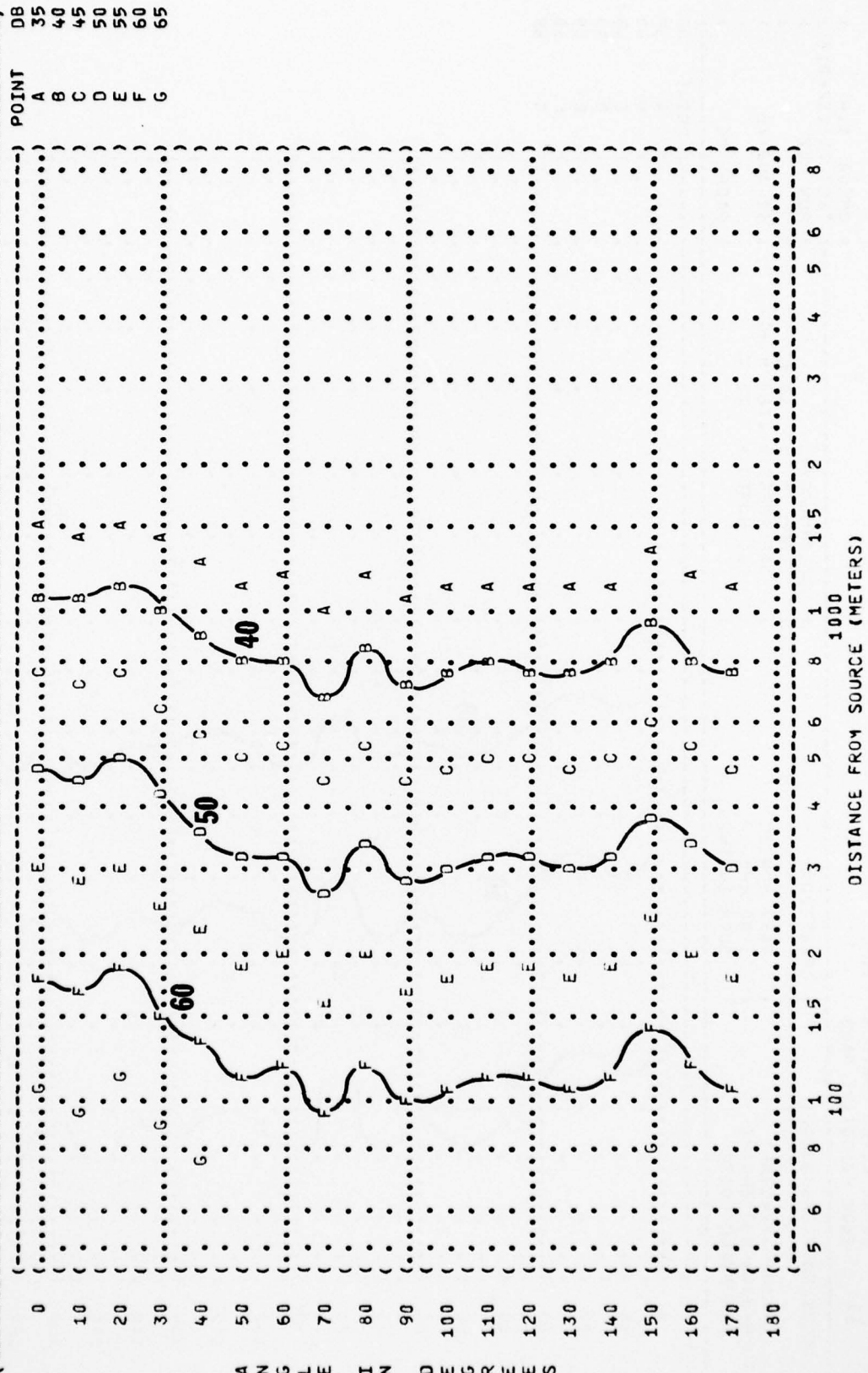
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 ((EQUAL LEVEL CONTOURS (DB)
 ((11 500 HZ OCTAVE BAND
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 ((R-3350-898 ENGINE (1000 RPM
 ((FAR FIELD NOISE (BOTH ENGINES
 ((METEOROLOGY: (TEMP = 15 C
 ((BAR PRESS = .760 M HG
 ((REL HUMID = 70 %
 ((IDENTIFICATION: (OMEGA 1.4
 ((TEST 75-002-018
 ((RUN 02
 ((12 AUG 76
 ((PAGE 22



((POINT DB
 ((A 35
 ((B 40
 ((C 45
 ((D 50
 ((E 55
 ((F 60
 ((G 65
 ((H 70

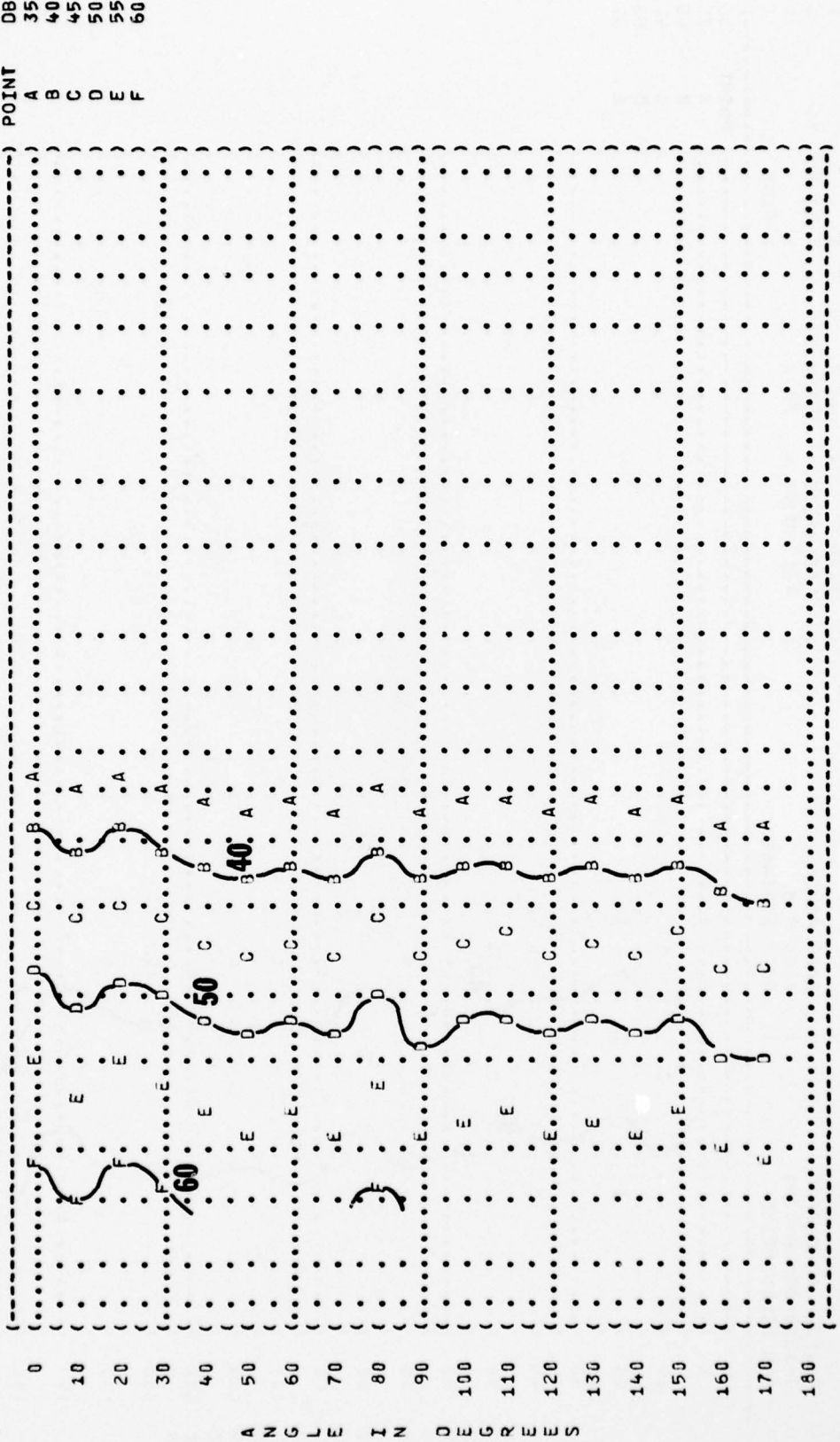
DISTANCE FROM SOURCE (METERS)

(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (IDENTIFICATION:
 (11 EQUAL LEVEL CONTOURS (DB)
 (1000 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:
 (C-119L AIRCRAFT (TAXI POWER
 (R-3350-89B ENGINE (1000 RPM
 (FAR FIELD NOISE (BOTH ENGINES
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (RUN 02
 (TEST 75-002-018
 (OMEGA 1.4
 (PAGE 23



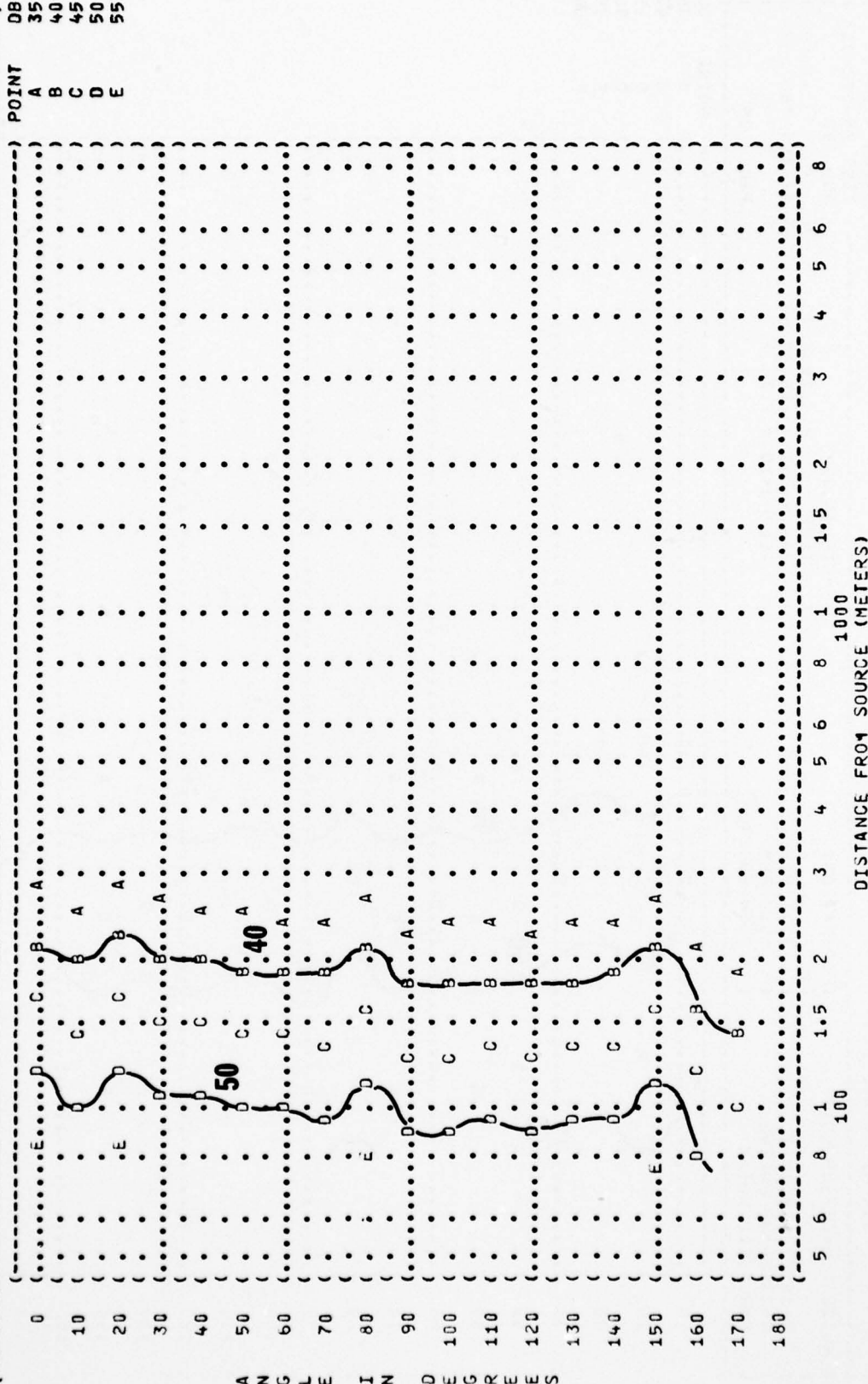
A N G L E I N D E G R E E S

(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (4000 HZ OCTAVE BAND
 (11
 (NOISE SOURCE/SUBJECT: (OPERATION:
 (C-119L AIRCRAFT (TAXI POWER
 (R-3350-89B ENGINE (1000 RPM
 (FAR FIELD NOISE (BOTH ENGINES
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 75-002-018
 (RUN 02
 (12 AUG 76
 (PAGE 25

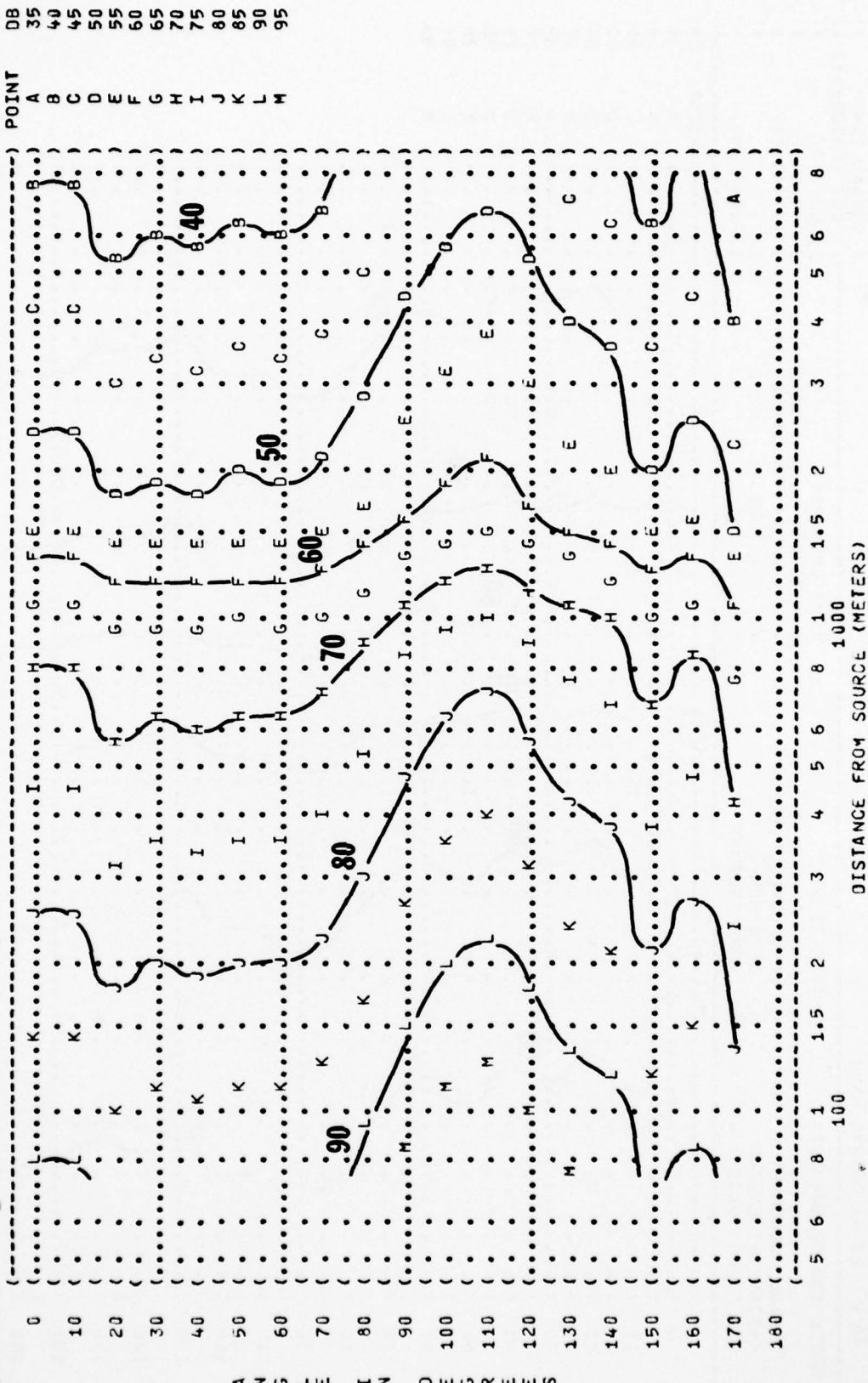


DISTANCE FROM SOURCE (METERS)

(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (8000 HZ OCTAVE BAND
 (**11**
 (NOISE SOURCE/SUBJECT: (OPERATION:
 (C-119L AIRCRAFT (TAXI POWER
 (R-3350-89B ENGINE (1000 RPM
 (FAR FIELD NOISE (BOTH ENGINES
 () METEOROLOGY:) TEMP = 15 C
 () BAR PRESS = .760 M HG
 () REL HUMID = 70 %
 () IDENTIFICATION:) OMEGA 1.4
 () TEST 75-002-018
 () RUN 02
 () 12 AUG 76
 () PAGE 26
 () POINT DB
 () A 35
 () B 40
 () C 45
 () D 50
 () E 55



() FIGURE: SOUND PRESSURE LEVEL (SPL)
 () EQUAL LEVEL CONTOURS (DB)
 () 11 31.5 HZ OCTAVE BAND
 () NOISE SOURCE/SUBJECT: () OPERATION:
 () C-119L AIRCRAFT () PROP SPEED CHECK
 () R-3350-89B ENGINE () 1800 RPM
 () FAR FIELD NOISE () BOTH ENGINES
 () METEOROLOGY: () TEMP = 15 C
 () BAR PRESS = .760 M HG
 () REL HUMID = 70 %
 () IDENTIFICATION: () OMEGA 1.4
 () TEST 75-002-018
 () RUN 03
 () 12 AUG 76
 () PAGE 18



A N G L E I N D E G R E E S

11

NOISE SOURCE/SUBJECT:

C-119L AIRCRAFT
R-3350-89B ENGINE
FAR FIELD NOISE

OPERATION:

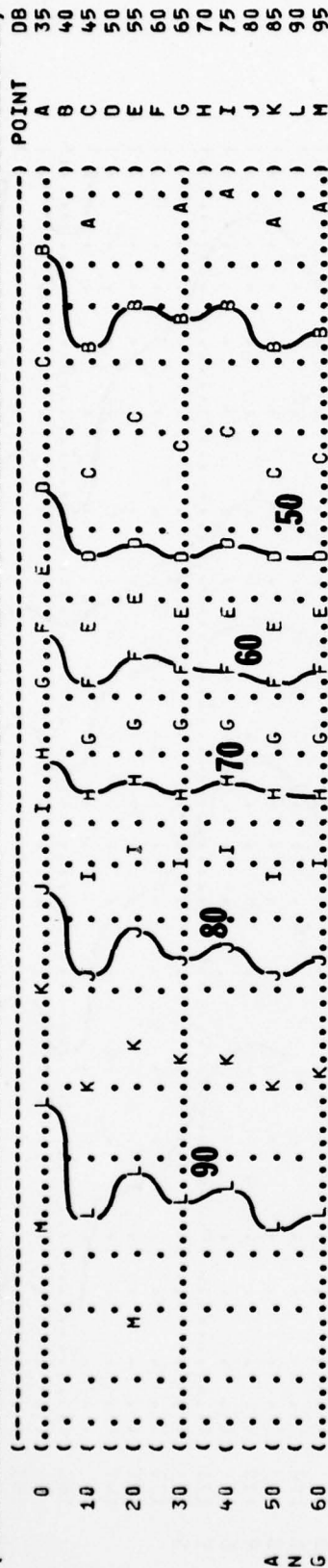
() PROP SPEED CHECK
() 1800 RPM
() BOTH ENGINES

METEOROLOGY:

TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

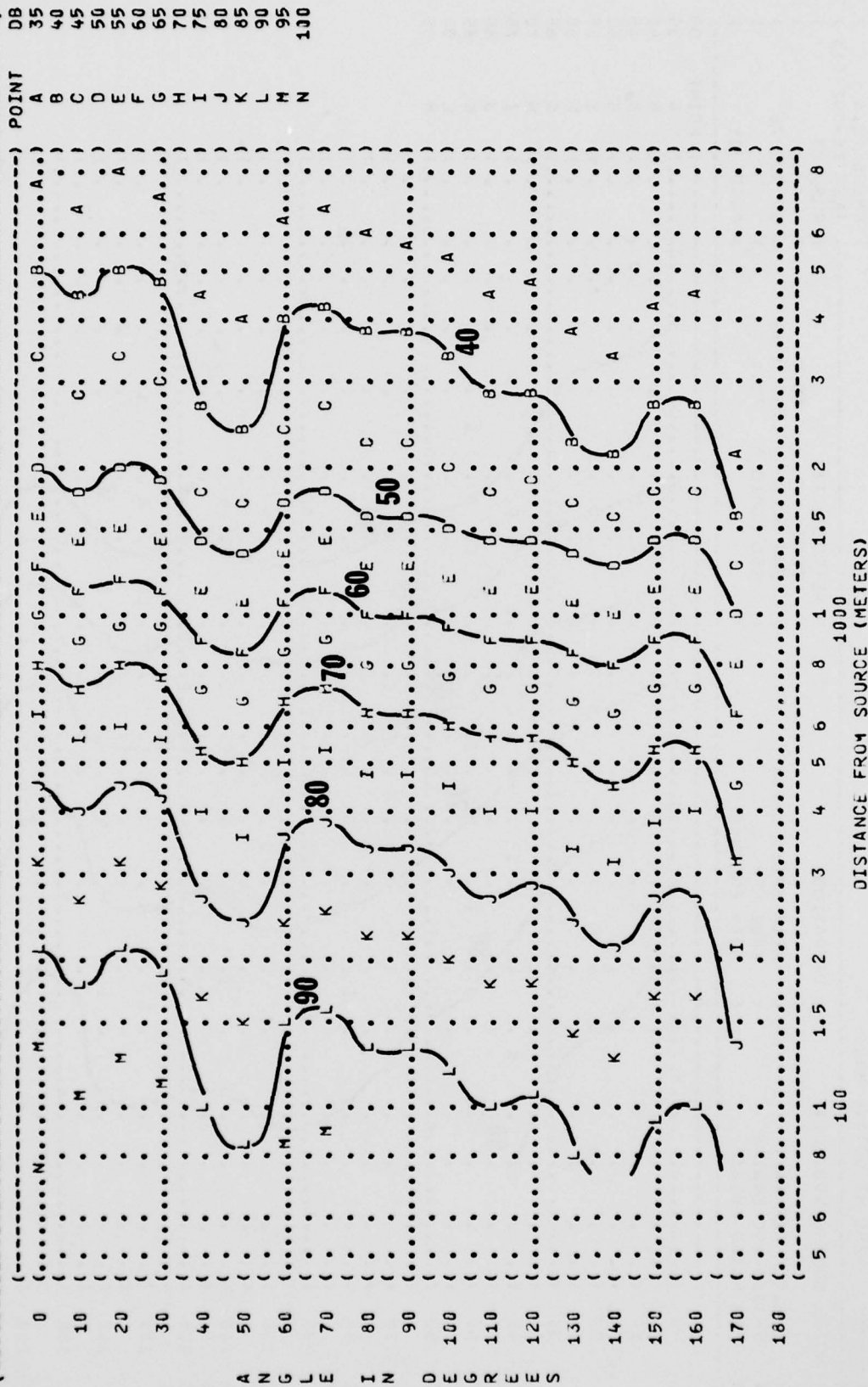
RUN 03

12 AUG 76
PAGE 19

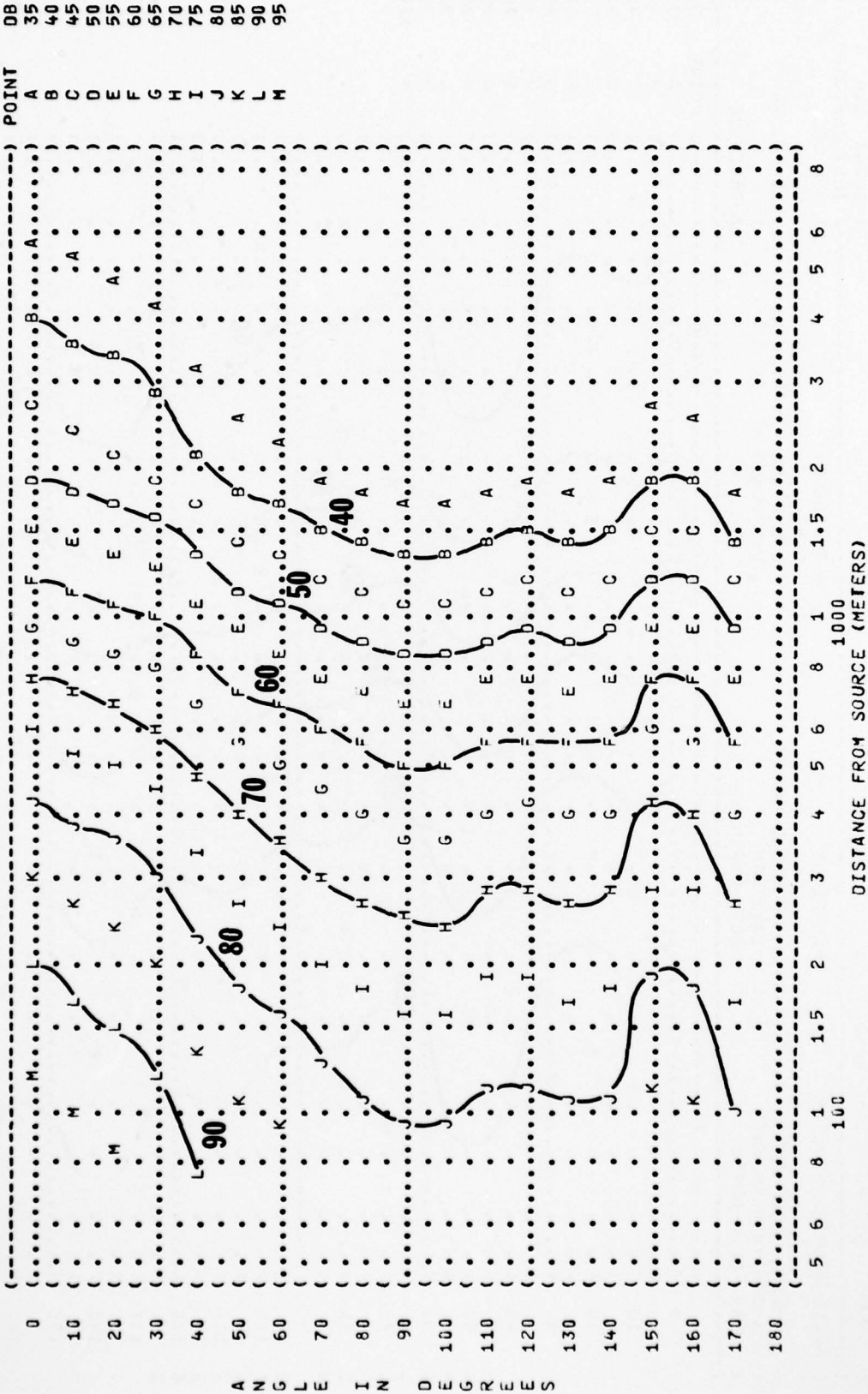


DISTANCE FROM SOURCE (METERS)

FIGURE:	SOUND PRESSURE LEVEL {SPL}	IDENTIFICATION:
11	EQUAL LEVEL CONTOURS (DB)	
	125 HZ OCTAVE BAND	OMEGA 1.4
		TEST 75-002-018
		RUN 03
NOISE SOURCE/SUBJECT:	OPERATION:	METEOROLOGY:
		TEMP = 15 C
	PROP SPEED CHECK	BAR PRESS = .760 M HG
	1800 RPM	REL HUMID = 70 %
	30TH ENGINES	
		PAGE 20

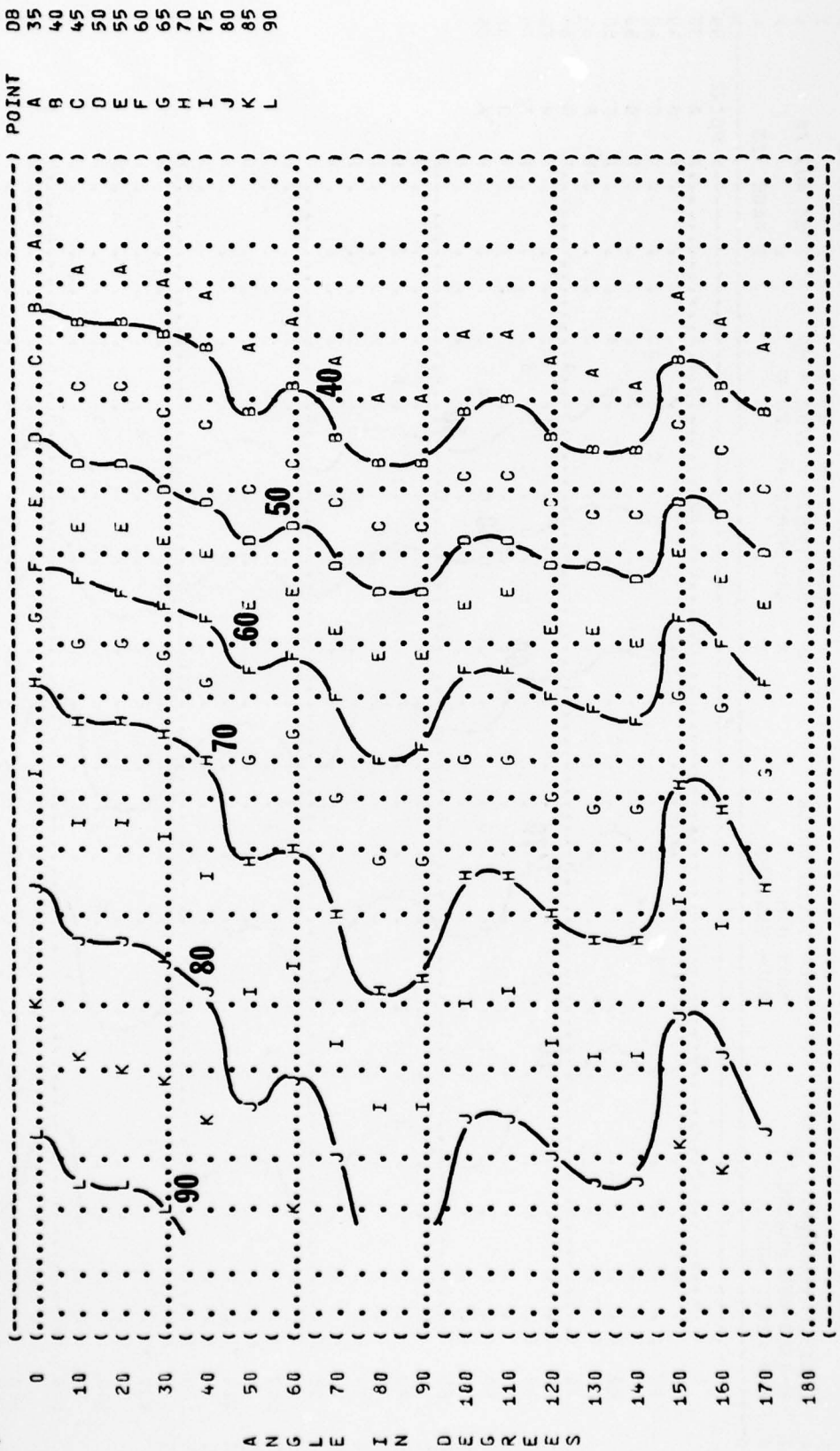


(FIGURE: SOUND PRESSURE LEVEL (SPL))
 (11 EQUAL LEVEL CONTOURS (DB))
 (250 HZ OCTAVE BAND)
 (NOISE SOURCE/SUBJECT:)
 (C-119L AIRCRAFT)
 (R-3350-89B ENGINE)
 (FAR FIELD NOISE)
 (OPERATION:)
 (PROP SPEED CHECK)
 (1800 RPM)
 (BOTH ENGINES)
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 75-002-018)
 (RUN 03)
 (12 AUG 76)
 (PAGE 21)



A N G L E I N D E G R E E S

((FIGURE: SOUND PRESSURE LEVEL (SPL)
 ((EQUAL LEVEL CONTOURS (DB)
 ((11 500 HZ OCTAVE BAND
 ((NOISE SOURCE/SUBJECT: (OPERATION:
 ((C-119L AIRCRAFT (PROP SPEED CHECK
 ((R-3350-89B ENGINE (1800 RPM
 ((FAR FIELD NOISE (BOTH ENGINES
 ((METEOROLOGY:
 ((TEMP = 15 C
 ((BAR PRESS = .760 M HG
 ((REL HUMID = 70 %
 ((IDENTIFICATION:
 ((OMEGA 1.4
 ((TEST 75-002-018
 ((RUN 03
 ((12 AUG 76
 ((PAGE 22



DB 35
 40
 45
 50
 55
 60
 65
 70
 75
 80
 85
 90

AD-A048 939

AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB OHIO F/G 20/1
USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK. VOLUME 99. C-119L AI--ETC(U)
MAY 77 R G POWELL

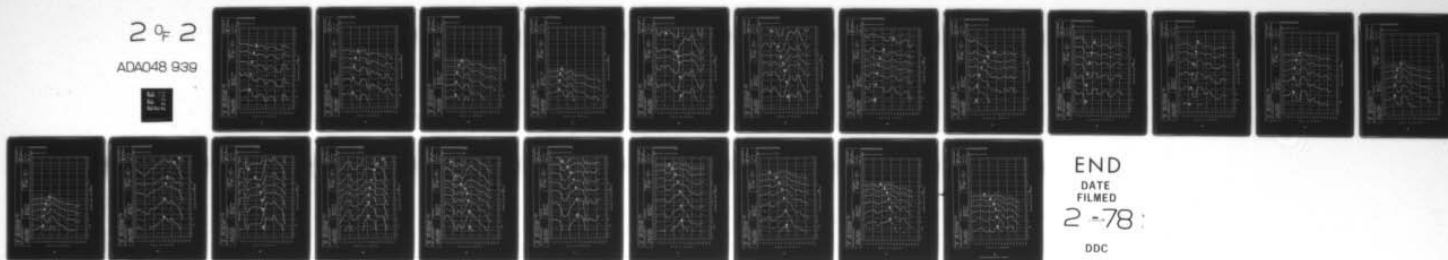
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AMRL-TR-75-50-VOL-99

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2 of 2

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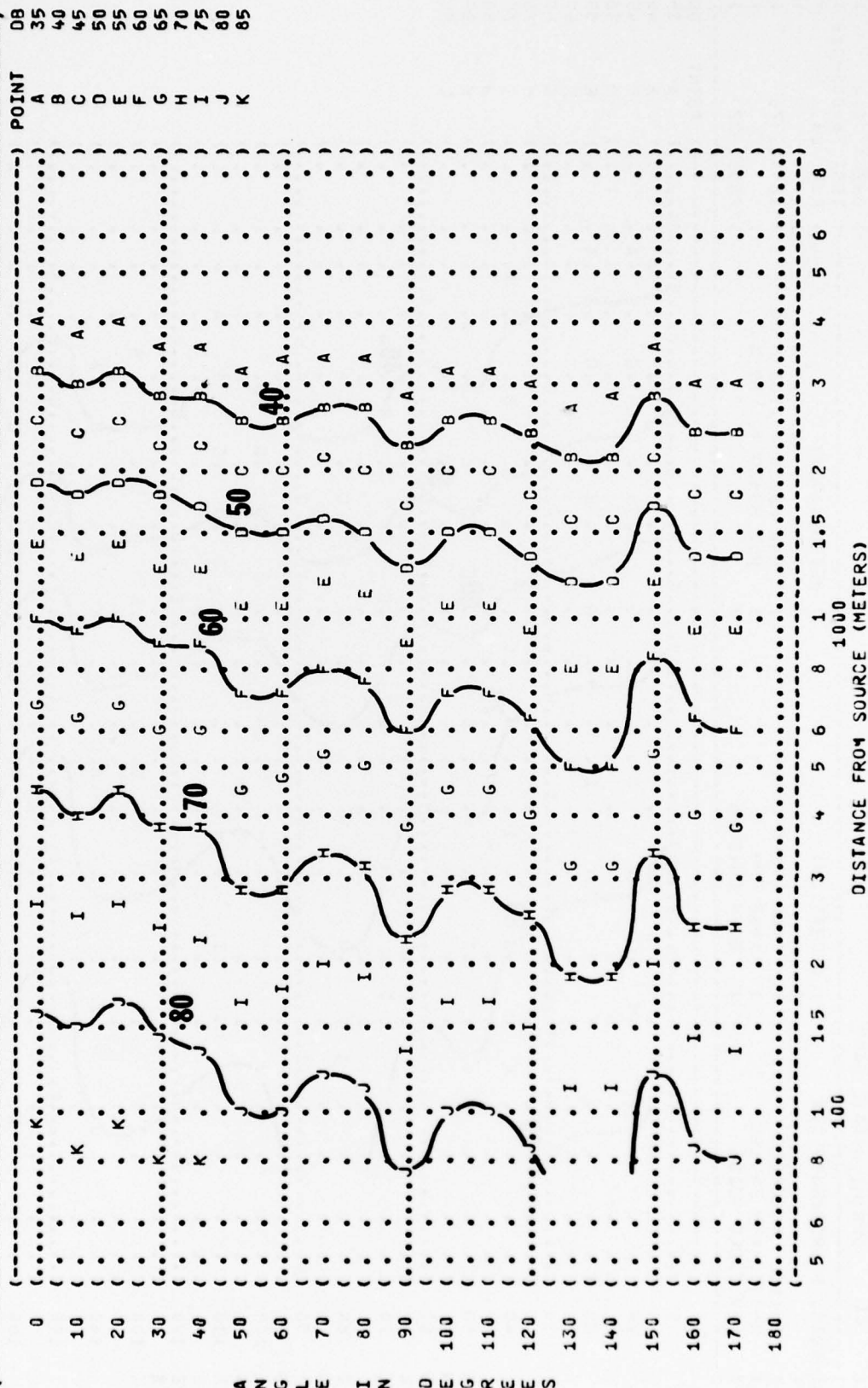
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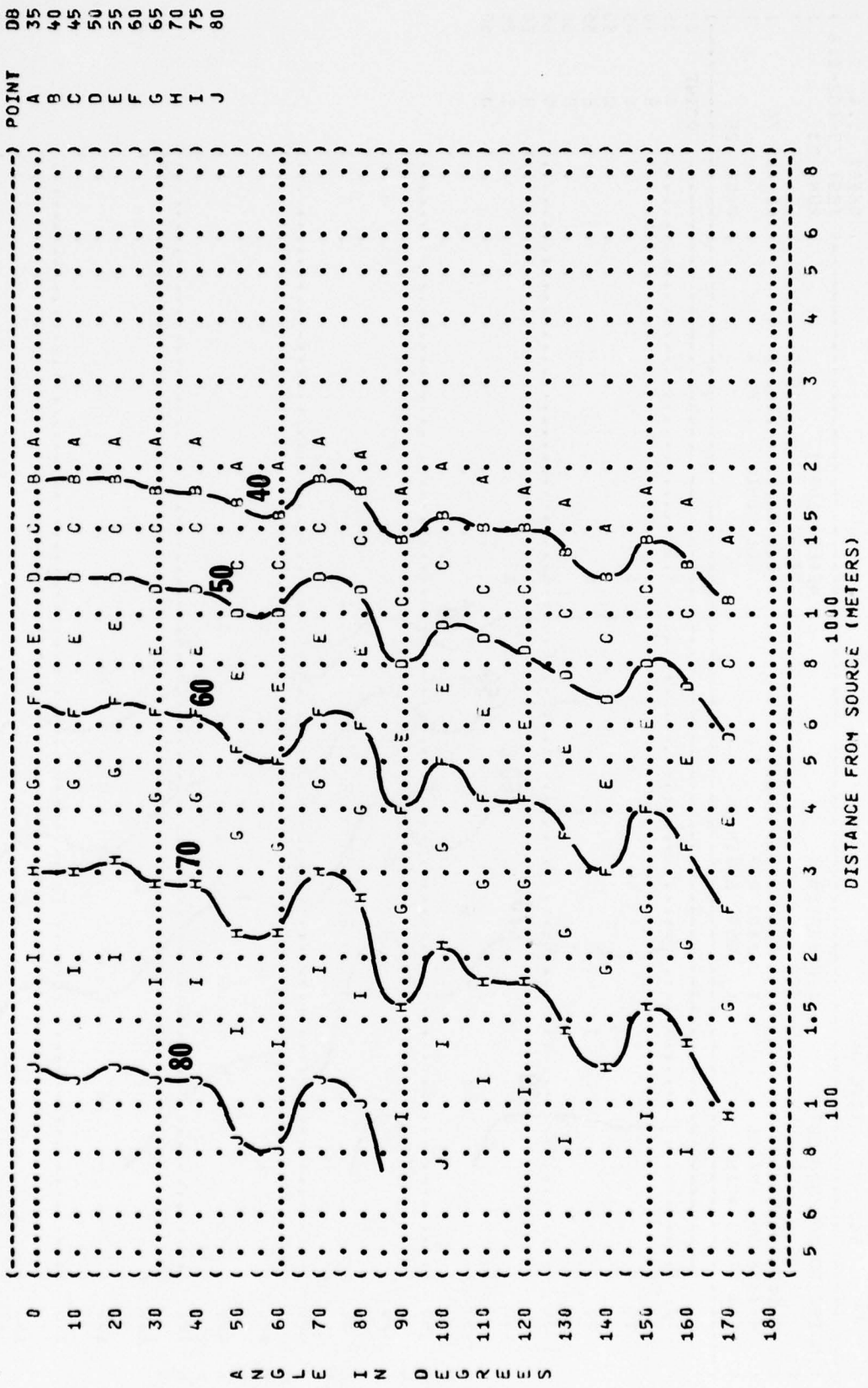
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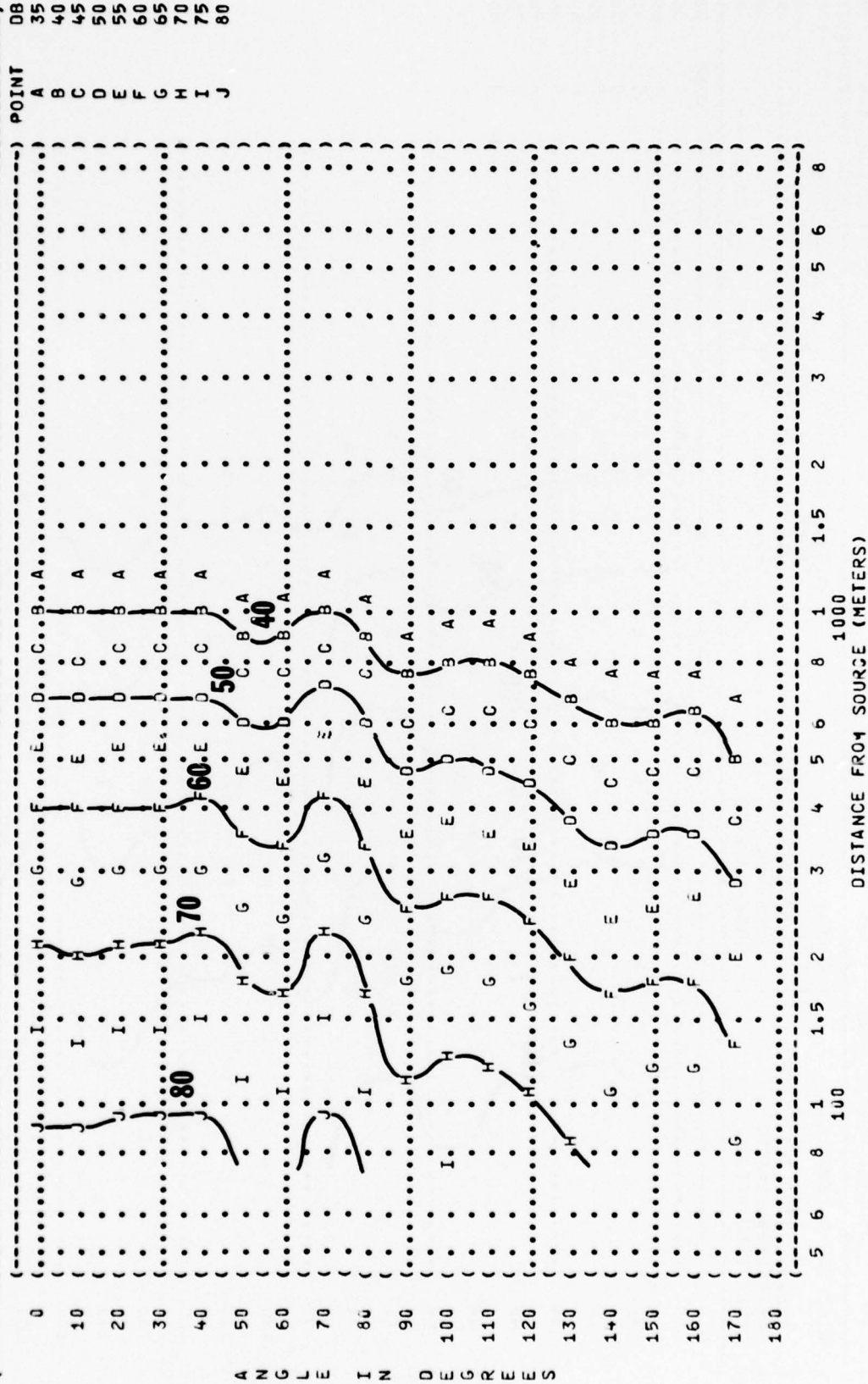
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 ((1000 HZ OCTAVE BAND))
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 ((R-3350-898 ENGINE))
 ((FAR FIELD NOISE))
 ((OPERATION:))
 ((PROP SPEED CHECK))
 ((1800 RPM))
 ((BOTH ENGINES))
 ((METEOROLOGY:))
 ((TEMP = 15 C))
 ((BAR PRESS = .760 M HG))
 ((REL HUMID = 70 %))
 ((12 AUG 76))
 ((RUN 03))
 ((PAGE 23))



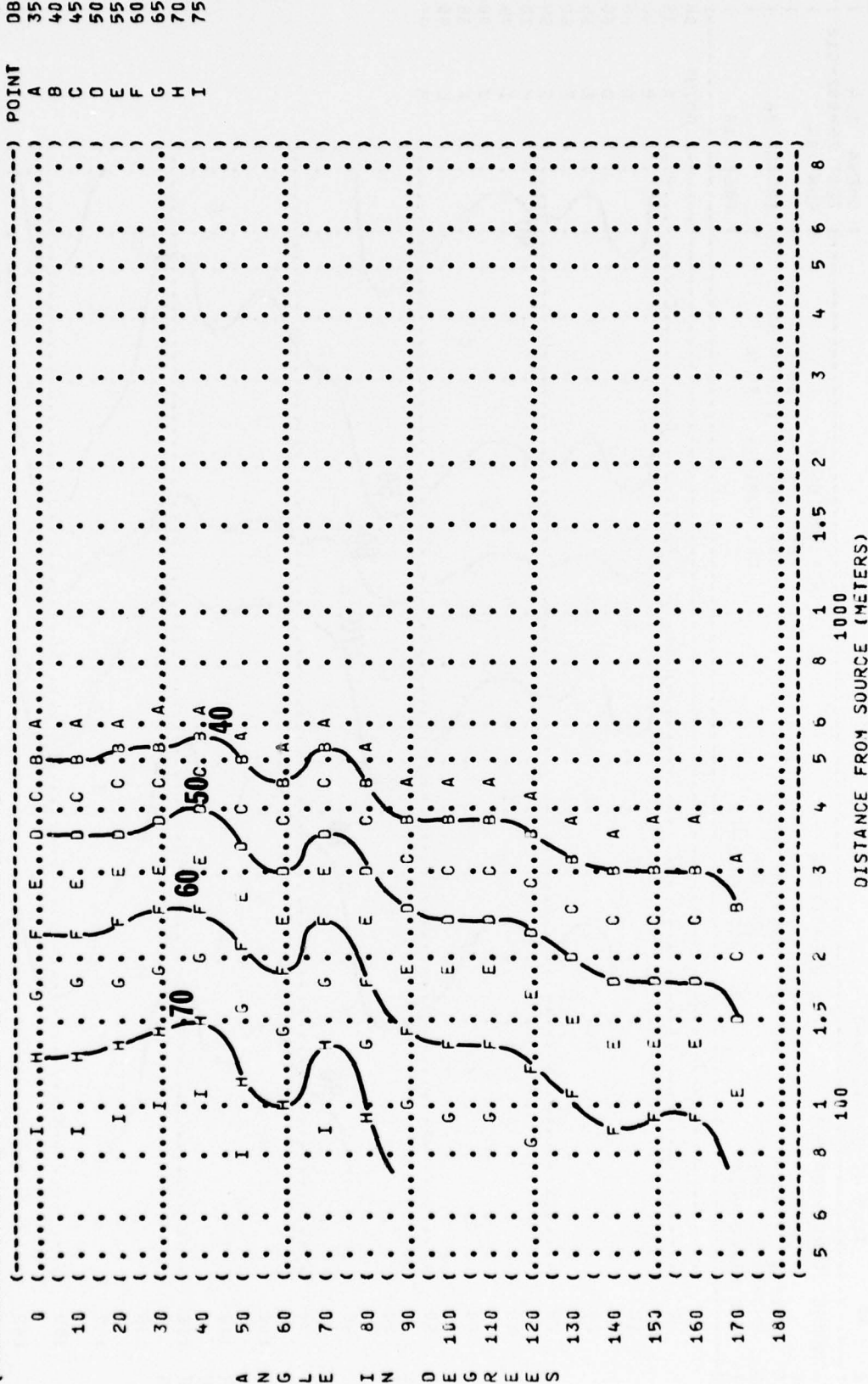
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 (11 EQUAL LEVEL CONTOURS (DB))
 (2000 HZ OCTAVE BAND)
 (NOISE SOURCE/SUBJECT:)
 (OPERATION:)
 (C-119L AIRCRAFT)
 (R-3350-89B ENGINE)
 (FAR FIELD NOISE)
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 75-002-018)
 (RUN 03)
 (12 AUG 76)
 (PAGE 24)



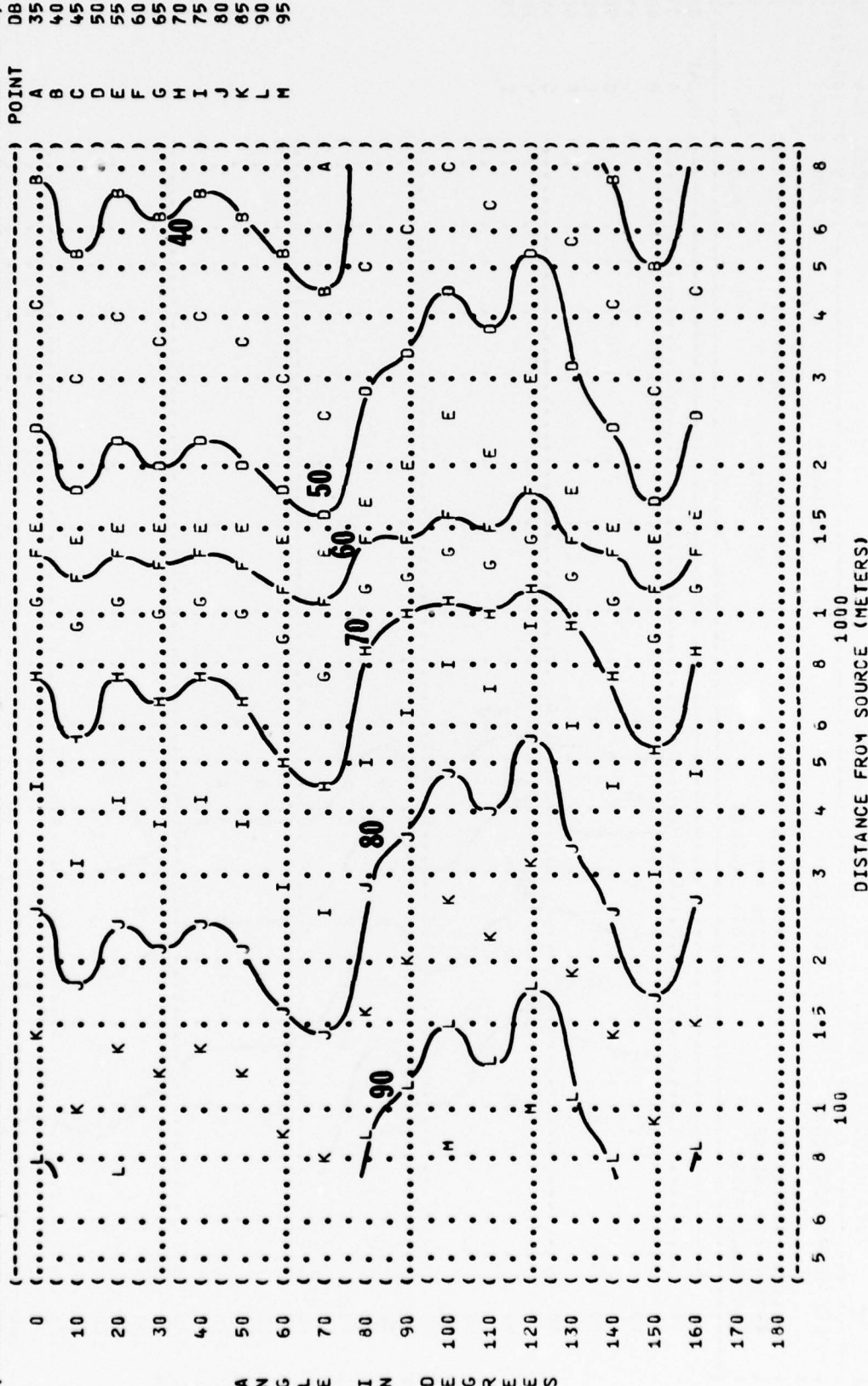
() FIGURE: SOUND PRESSURE LEVEL (SPL)
 () EQUAL LEVEL CONTOURS (DB)
 () 11 4000 HZ OCTAVE BAND
 () NOISE SOURCE/SUBJECT:
 () () OPERATION:
 () () PROP SPEED CHECK
 () () 1800 RPM
 () () BOTH ENGINES
 () C-119L AIRCRAFT
 () R-3350-89B ENGINE
 () FAR FIELD NOISE
 () METEOROLOGY:
 () TEMP = 15 C
 () BAR PRESS = .760 H HG
 () REL HUMID = 70 %
 () IDENTIFICATION:
 () OMEGA 1.4
 () TEST 75-002-010
 () RUN 03
 () 12 AUG 76
 () PAGE 25



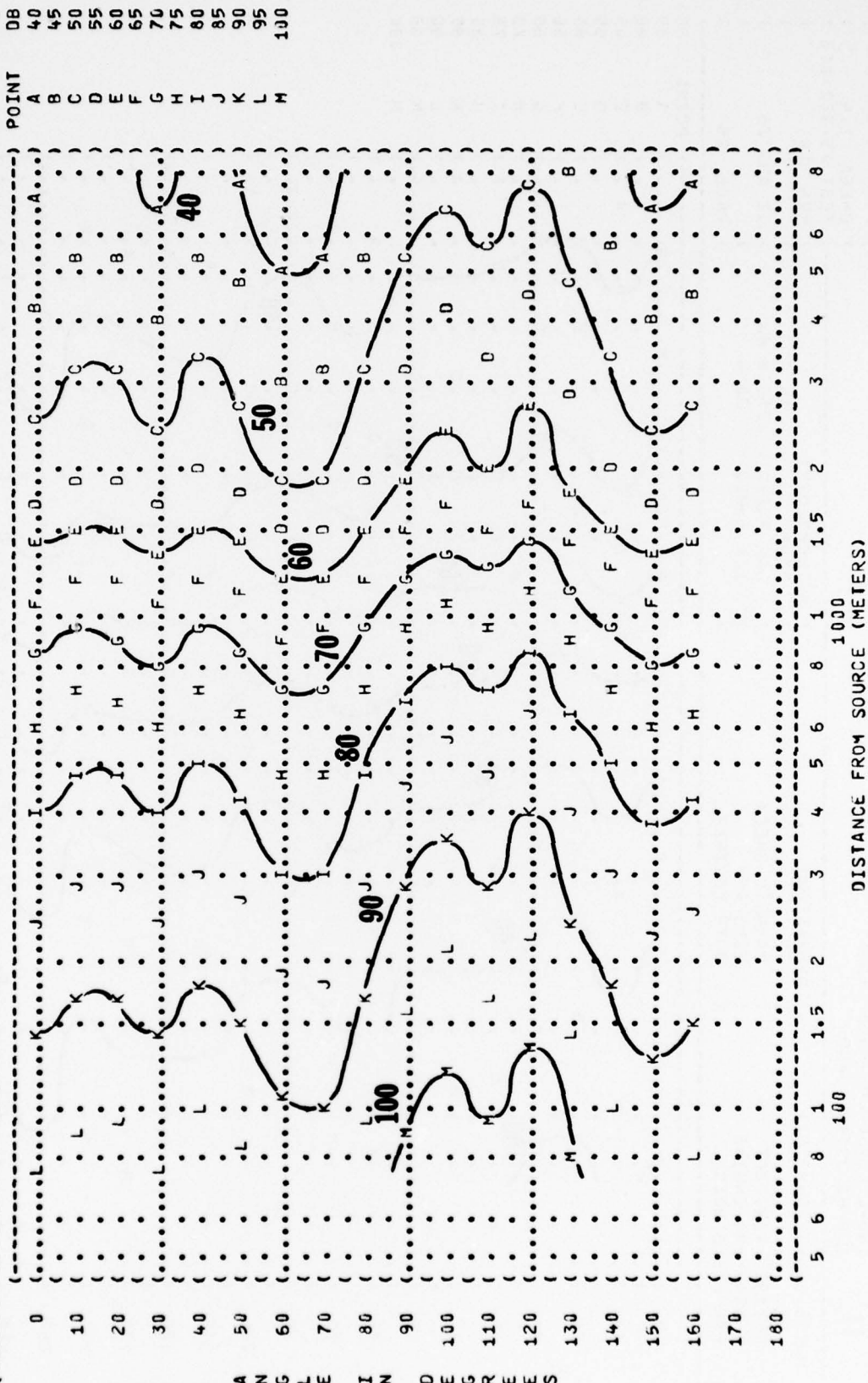
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 (11 EQUAL LEVEL CONTOURS (03)
 (8000 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:
 (C-119L AIRCRAFT (PROP SPEED CHECK
 (R-3350-89B ENGINE (1800 RPM
 (FAR FIELD NOISE (BOTH ENGINES
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 75-002-018
 (RUN 03
 (12 AUG 76
 (PAGE 26



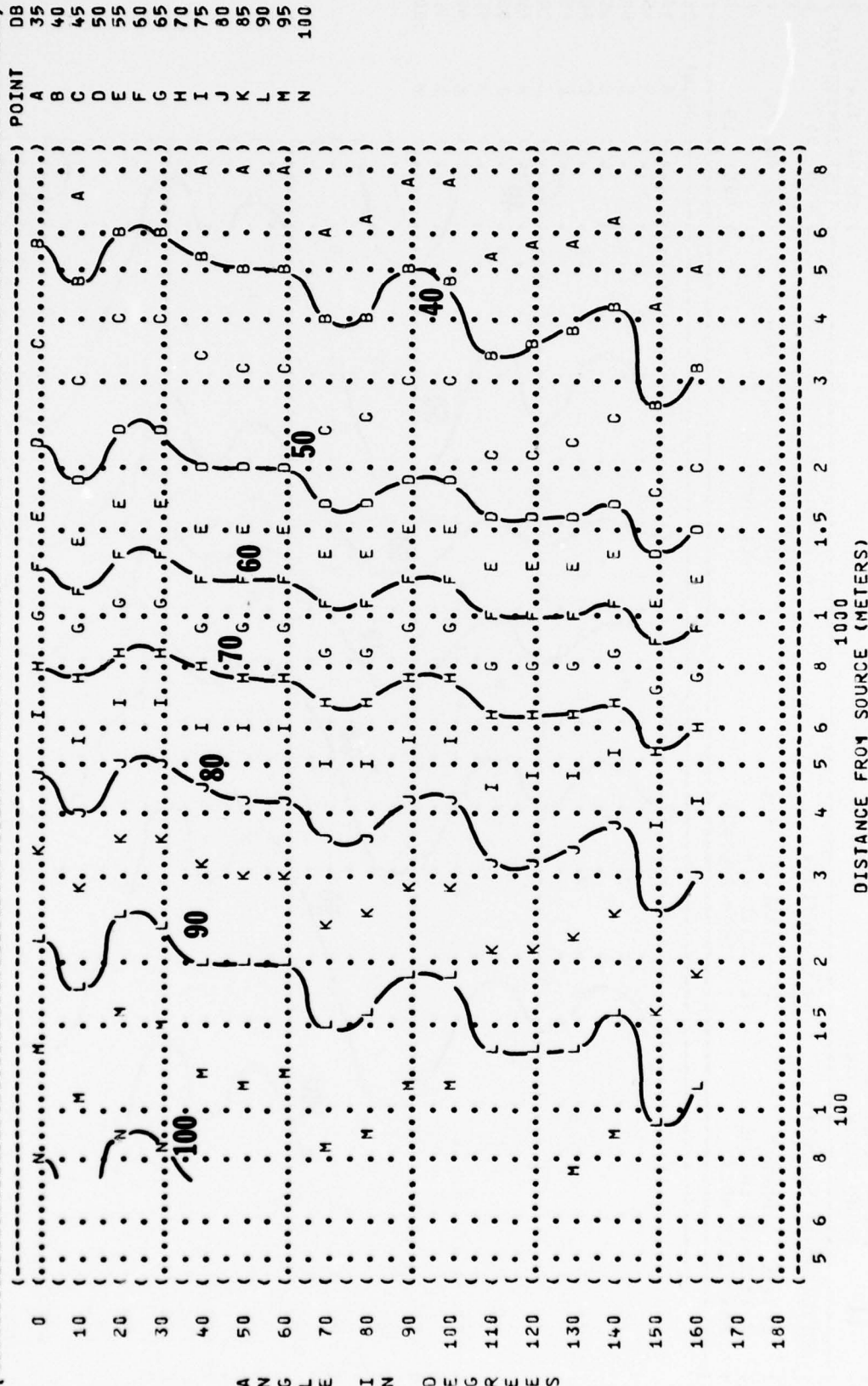
(FIGURE: SOUND PRESSURE LEVEL (SPL))
 (11 EQUAL LEVEL CONTOURS (DB))
 (31.5 HZ OCTAVE BAND)
 (NOISE SOURCE/SUBJECT:)
 (C-119L AIRCRAFT)
 (R-3350-89B ENGINE)
 (FAR FIELD NOISE)
 (OPERATION:)
 (MAGNETO CHECK)
 (2100 RPM)
 (BOTH ENGINES)
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = 760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 75-002-018)
 (RUN 04)
 (12 AUG 76)
 (PAGE 18)



(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (11 63 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT:
 (C-119L AIRCRAFT
 (R-3350-69B ENGINE
 (FAR FIELD NOISE
 (OPERATION:
 (MAGNETO CHECK
 (2100 RPM
 (BOTH ENGINES
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 75-002-018
 (RUN 04
 (12 AUG 76
 (PAGE 19



(FIGURE: SOUND PRESSURE LEVEL (SPL))
 (EQUAL LEVEL CONTOURS (DB))
 (125 HZ OCTAVE BAND)
 (NOISE SOURCE/SUBJECT:)
 (OPERATION:)
 (C-119L AIRCRAFT)
 (R-3350-898 ENGINE)
 (FAR FIELD NOISE)
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 75-002-018)
 (RUN 04)
 (12 AUG 76)
 (PAGE 20)



ANGLE IN DEGREES

IDENTIFICATION: OMEGA 1.4

4.4

1) METEOROLOGY:

) RUN 04

MAGNETO CHECK

BAR PRESS = .760 M HG

2100 RPM

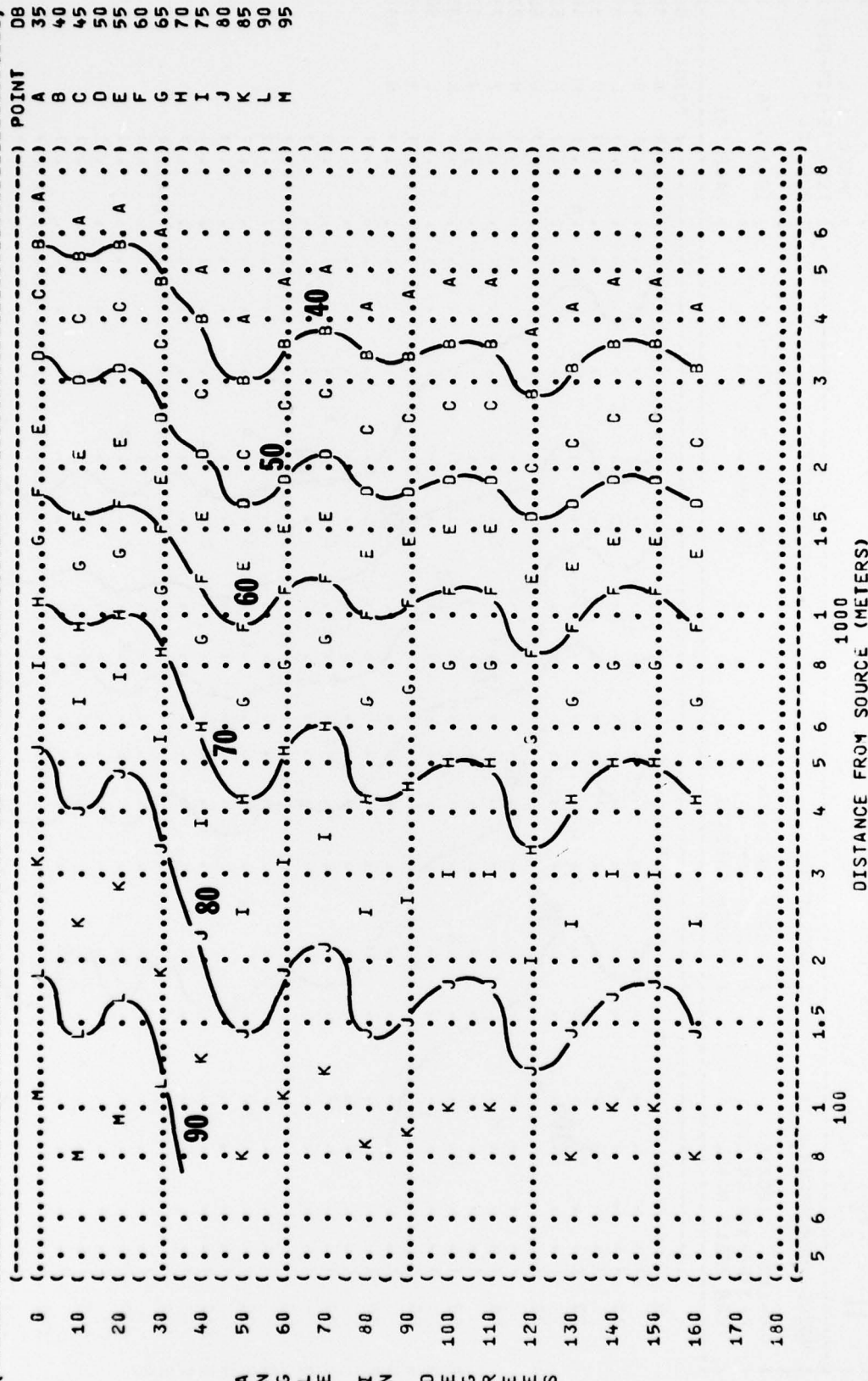
REL HUMID = 70 %

BOTH ENGINES

) PAGE 21



(	FIGURE:	SOUND PRESSURE LEVEL {SPL}		) IDENTIFICATION:	
(		EQUAL LEVEL CONTOURS (DB))	
(	11	500 HZ OCTAVE BAND		) OMEGA 1.4	
(				) TEST 75-002-018	
(	NOISE SOURCE/SUBJECT:	(OPERATION:	METEOROLOGY:	) RUN 04	
(		(	TEMP = 15 C)	
(	C-119L AIRCRAFT	(MAGNETO CHECK	BAR PRESS = .760 M HG	) 12 AU5 76	
(	R-3350-89B ENGINE	(2100 RPM	REL HUMID = 70 %)	
(	FAR FIELD NOISE	(BOTH ENGINES		) PAGE 22	



ANGIE IN DEWEES

IDENTIFICATION:
OMEGA 1.4

OMEGA 1.4

1) METEOROLOGY:

TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

(MAGNETO CHECK
(2100 RPM
(BOTH ENGINES

12 AUG 76
PAGE 23



IDENTIFICATION:
OMEGA 1.4

OMEGA 1.4
TEST 75-002-018

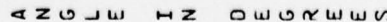
METEOROLOGY:

04 RUN

BAR PRESS = .760 M HG
REL HUMID = 70 %

12 AUG 76
PAGE 24

08



((FIGURE: SOUND PRESSURE LEVEL (SPL)) IDENTIFICATION:)
 ((11 EQUAL LEVEL CONTOURS (D3)))
 ((8000 HZ OCTAVE BAND))
 ((NOISE SOURCE/SUBJECT:))
 ((C-119L AIRCRAFT))
 ((R-3350-89B ENGINE))
 ((FAR FIELD NOISE))
 ((OPERATION:))
 ((MAGNETO CHECK))
 ((2100 RPM))
 ((BOTH ENGINES))
 ((METEOROLOGY:))
 ((TEMP = 15 C))
 ((BAR PRESS = .760 M HG))
 ((REL HUMID = 70 %))
 ((12 AUG 76))
 ((RUN 04))
 ((TEST 75-002-018))
 ((PAGE 26))

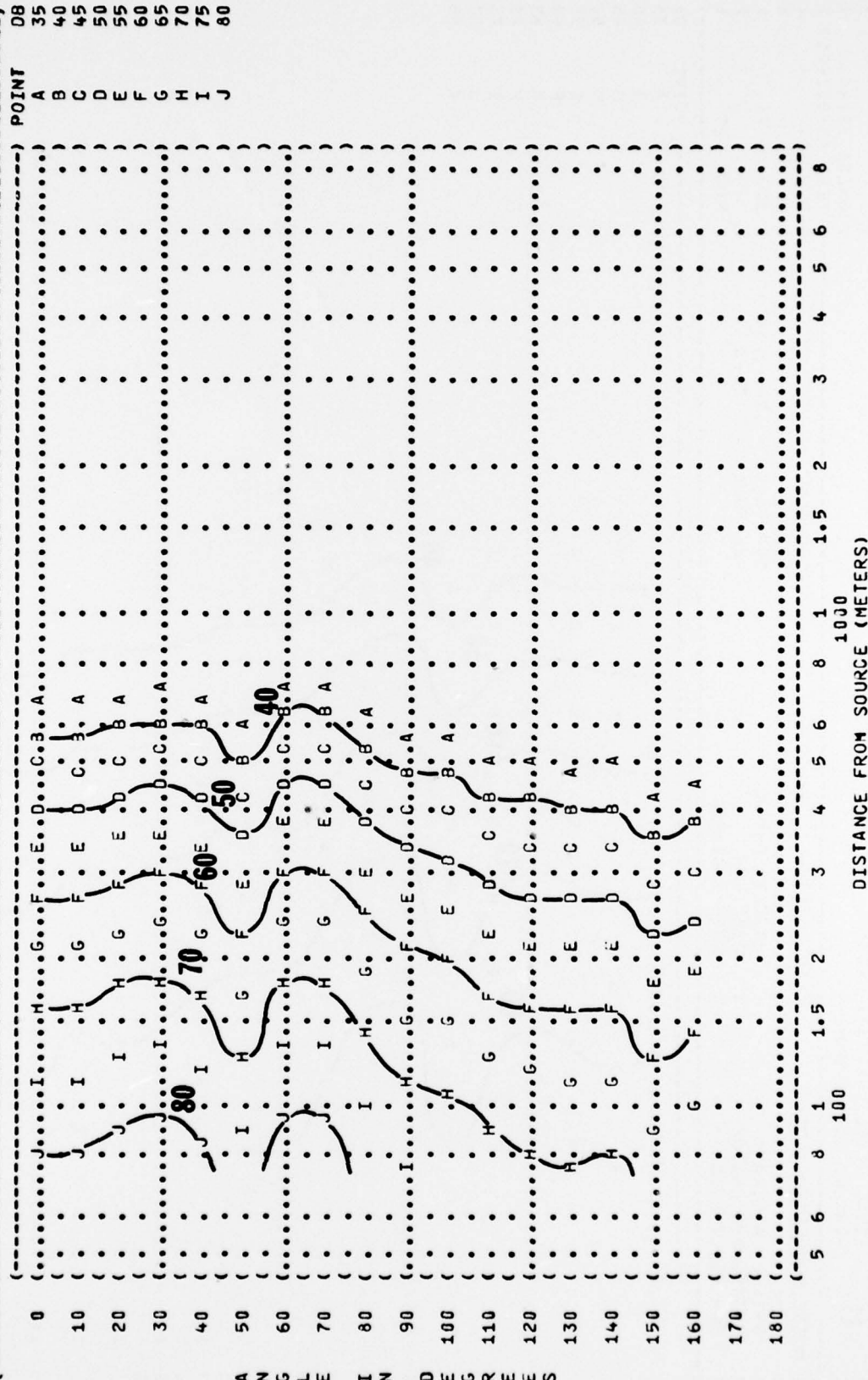


FIGURE: SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
31.5 HZ OCTAVE BAND

11

NOISE SOURCE/SUBJECT:

OPERATION:

METEOROLOGY:

IDENTIFICATION:

OMEGA 1.4

TEST 75-002-018

RUN 05

C-119L AIRCRAFT

R-3350-89B ENGINE

FAR FIELD NOISE

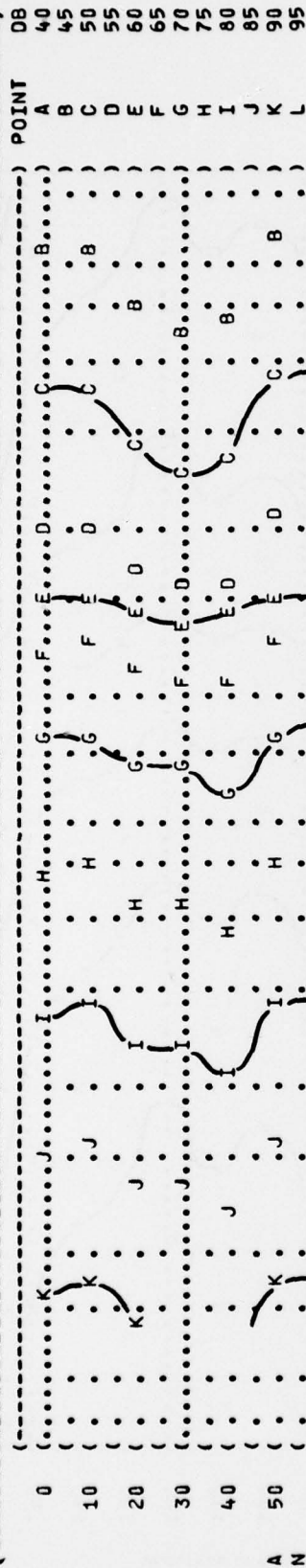
TEMP = 15 C

BAR PRESS = .760 M HG

REL HUMID = 70 %

12 AUG 76

PAGE 18



(FIGURE: SOUND PRESSURE LEVEL (SPL))
 (EQUAL LEVEL CONTOURS (DB))
 (11 63 HZ OCTAVE BAND)
 (NOISE SOURCE/SUBJECT:)
 (C-119L AIRCRAFT)
 (R-3350-89B ENGINE)
 (FAR FIELD NOISE)
 (OPERATION:)
 (MAXIMUM POWER)
 (2900 RPM)
 (BOTH ENGINES)
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 75-002-018)
 (RUN 05)
 (12 AUG 76)
 (PAGE 19)

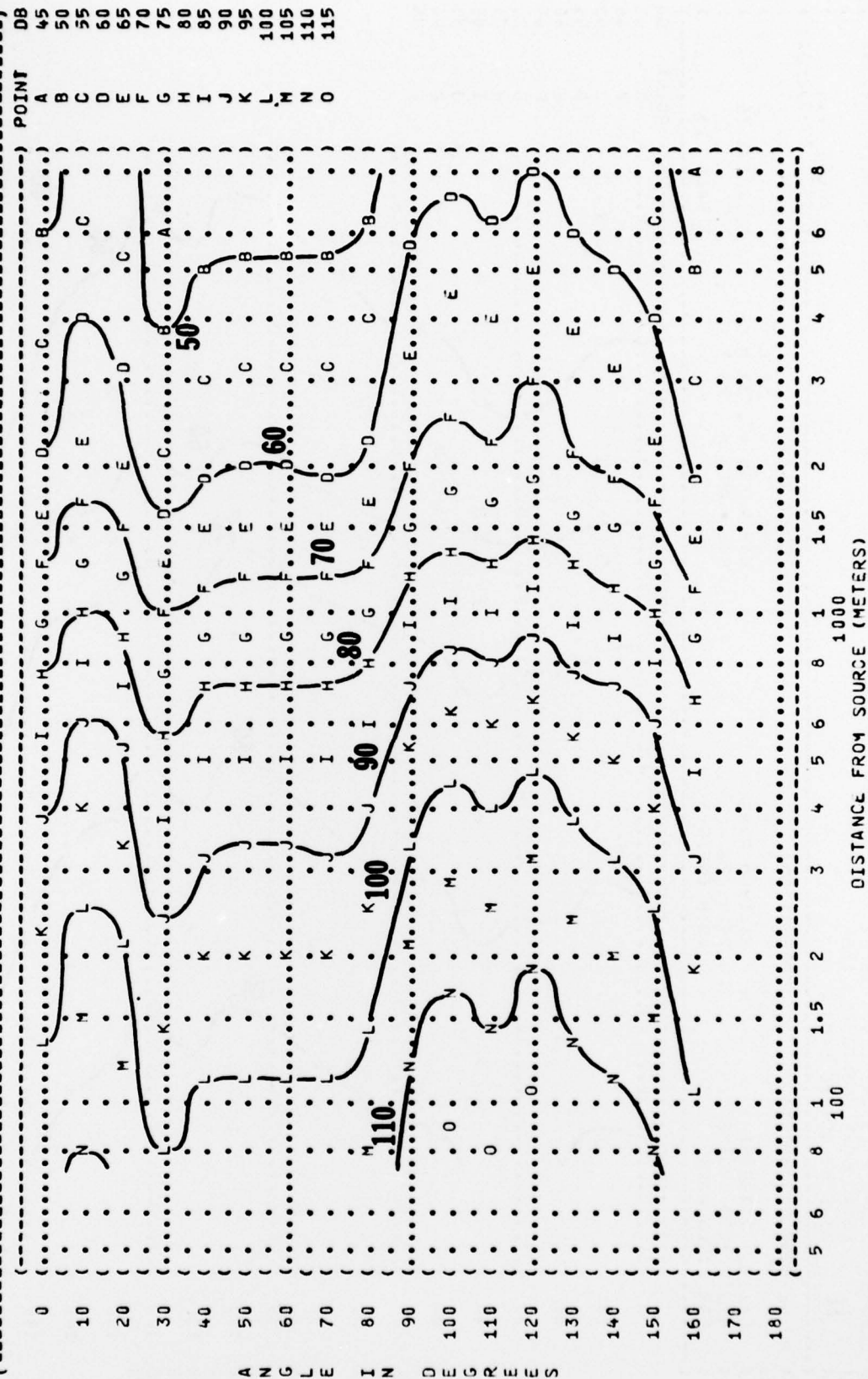


FIGURE 11 SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
125 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
(C-119L AIRCRAFT
(R-3350-89B ENGINE
(FAR FIELD NOISE

OPERATION:
(MAXIMUM POWER
(2900 RPM
(BOTH ENGINES

METEOROLOGY:
(TEMP = 15 C
(BAR PRESS = .760 M HG
(REL HUMID = 70 %

IDENTIFICATION:
(OMEGA 1.4
(TEST 75-002-018
(RUN 05
(12 AUG 76
(PAGE 20

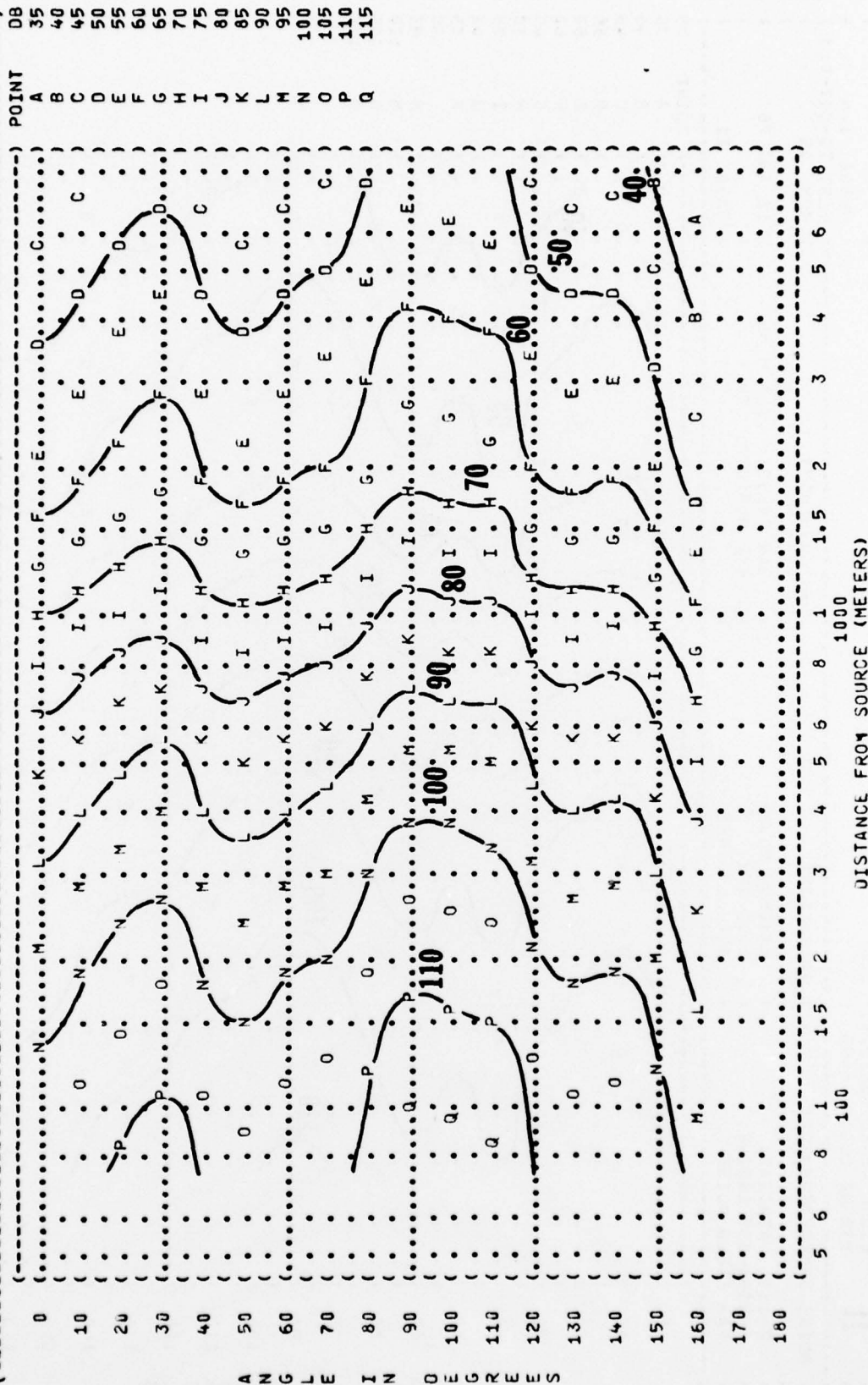


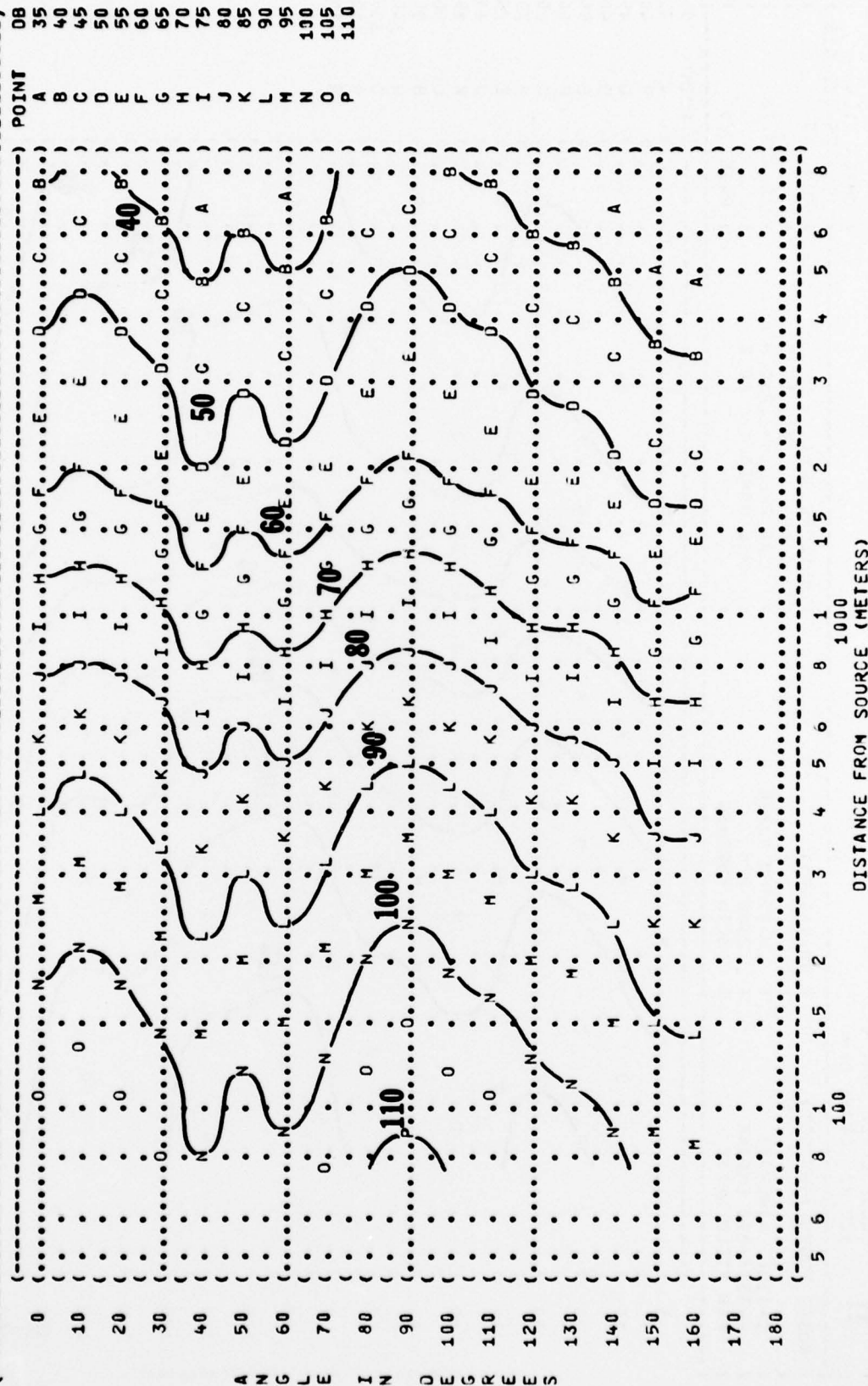
FIGURE 11 SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
250 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-119L AIRCRAFT
R-3350-89B ENGINE
FAR FIELD NOISE

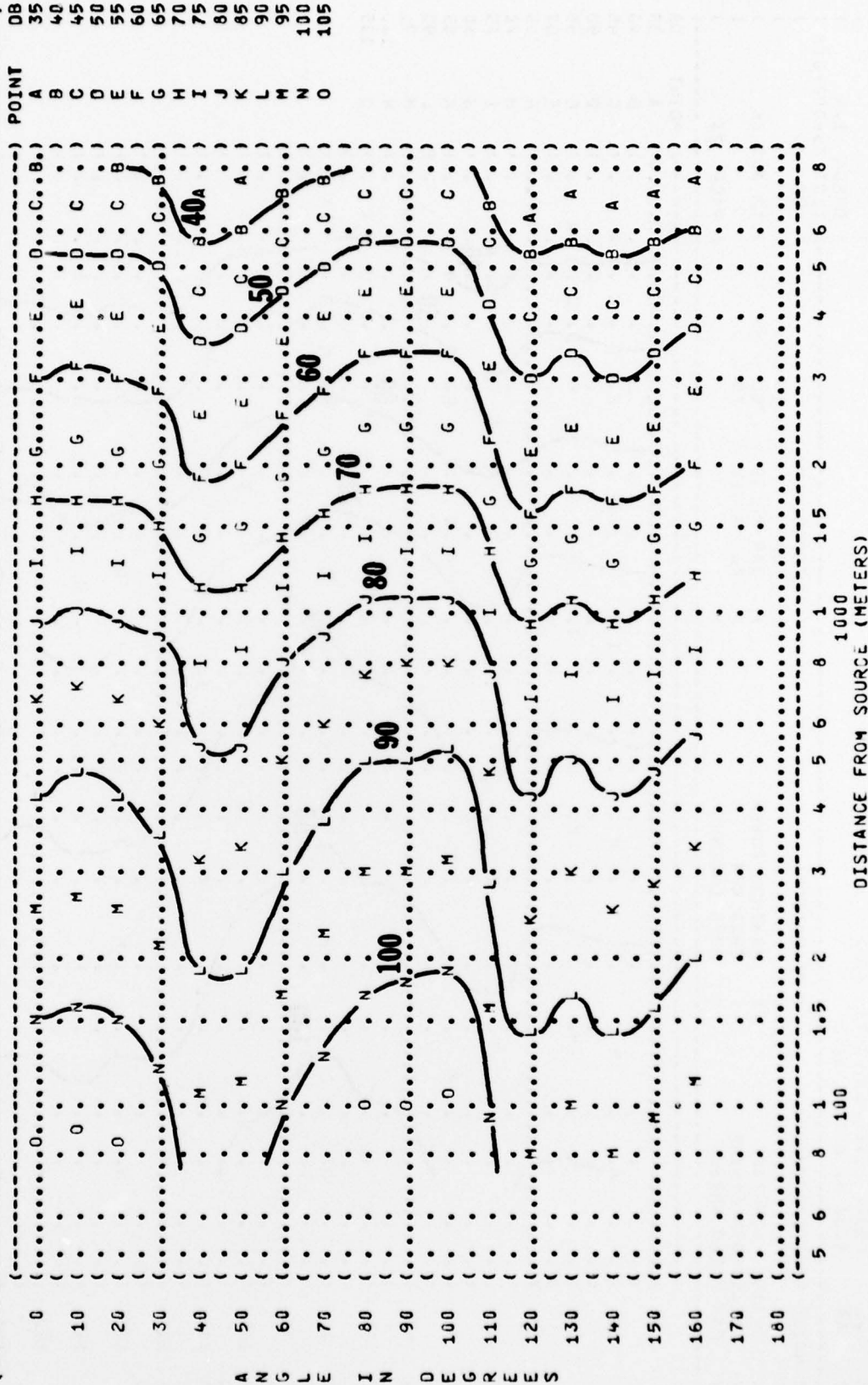
OPERATION:
MAXIMUM POWER
2900 RPM
BOTH ENGINES

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-018
RUN 05
PAGE 21



() FIGURE: SOUND PRESSURE LEVEL (SPL)
 () EQUAL LEVEL CONTOURS (DB)
 () 11 500 HZ OCTAVE BAND
 () NOISE SOURCE/SUBJECT: () OPERATION:
 () C-119L AIRCRAFT () MAXIMUM POWER
 () R-3350-89B ENGINE () 2900 RPM
 () FAR FIELD NOISE () BOTH ENGINES
 () METEOROLOGY:
 () TEMP = 15 C
 () BAR PRESS = .760 M HG
 () REL HUMID = 70 %
 () IDENTIFICATION:
 () OMEGA 1.4
 () TEST 75-002-018
 () RUN 05
 () 12 AUG 76
 () PAGE 22



SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
1000 HZ OCTAVE BAND

11

NOISE SOURCE/SUBJECT:

OPERATION:

1) METEOROLOGY:

TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

OMEGA 1.4

TEST 75-002-018

RUN 05

12 AUG 76

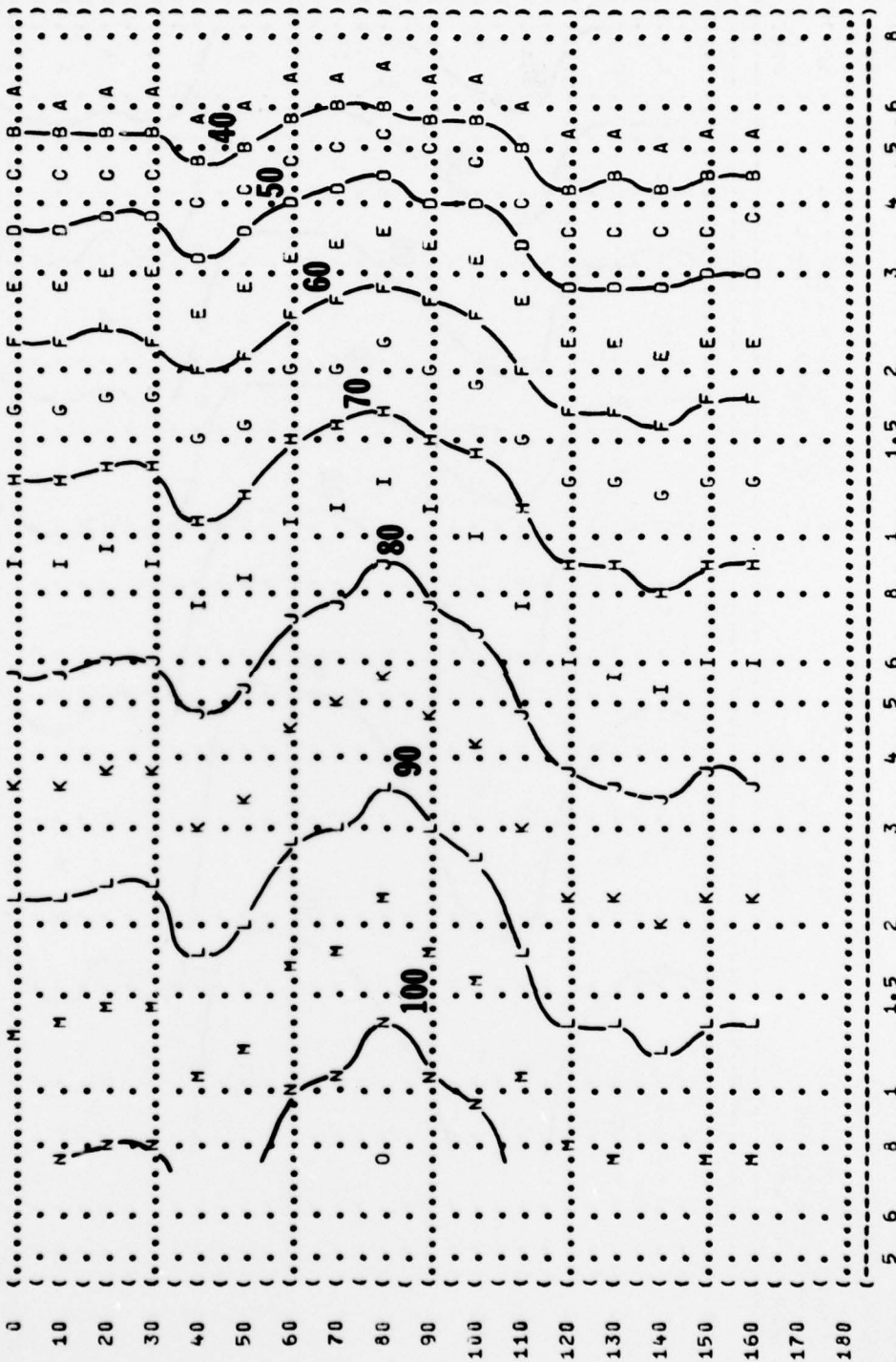
PAGE 23

IDENTIFICATION:

POINT

08

A B C D E F G H I J K L M N O

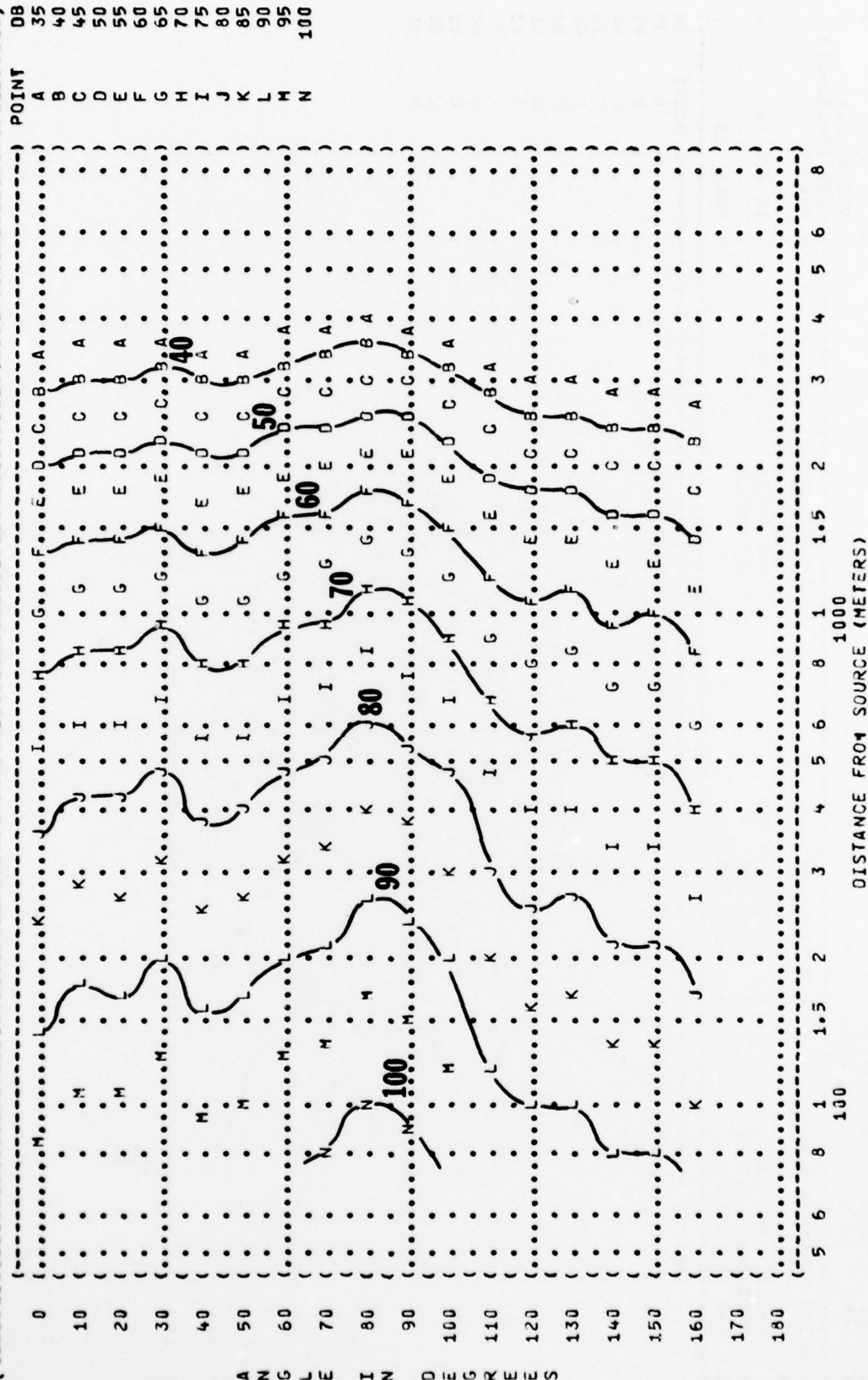


DISTANCE FROM SOURCE (METERS)

112

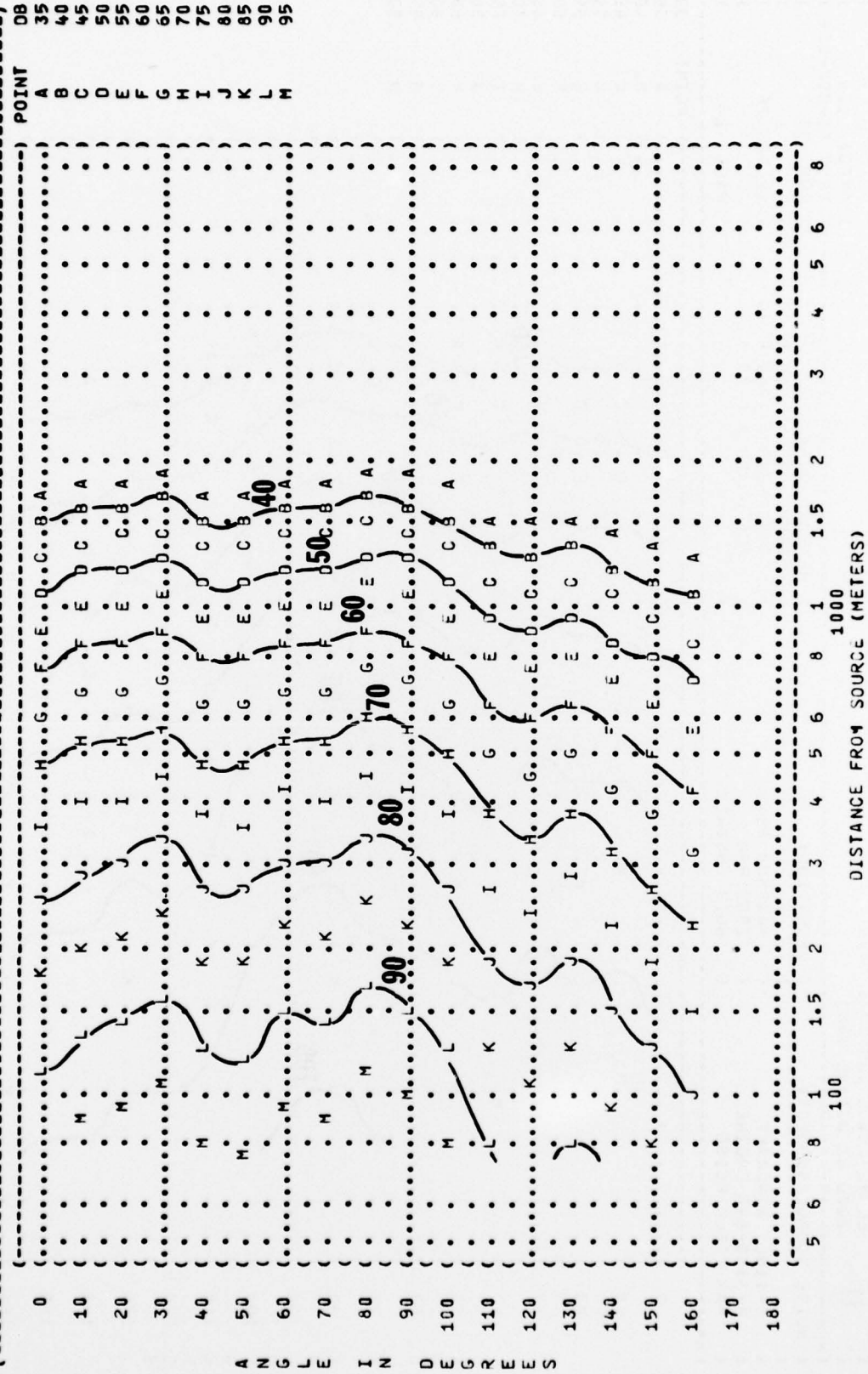
FIGURE#	SOUND PRESSURE LEVEL {SPL}	IDENTIFICATION#
11	EQUAL LEVEL CONTOURS (DB)	
	2000 HZ OCTAVE BAND	OMEGA 1.4
		TEST 75-002-018
		RUN 05
		12 AUG 76
		PAGE 24

NOISE SOURCE/SUBJECT:	OPERATION#	METEOROLOGY:
C-119L AIRCRAFT	MAXIMUM POWER	TEMP = 15 C
R-3350-89B ENGINE	2900 RPM	BAR PRESS = .760 M HG
FAR FIELD NOISE	BOTH ENGINES	REL HUMID = 70 %



420 JW HZ DUEXWWS

(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (03)
 (11 4000 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:
 (C-119L AIRCRAFT (MAXIMUM POWER
 (R-3350-89B ENGINE (2900 RPM
 (FAR FIELD NOISE (BOTH ENGINES
 (METEOROLOGY: (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION: (OMEGA 1.4
 (TEST 75-002-018
 (RUN 05
 (12 AUG 76
 (PAGE 25



IDENTIFICATION:
OMEGA 1.4

4.

METEOROLOGY:

BAR PRESS = .760 M HG
REL HUMID = 70 %

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POINT

ANGLE IN DEGREES

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